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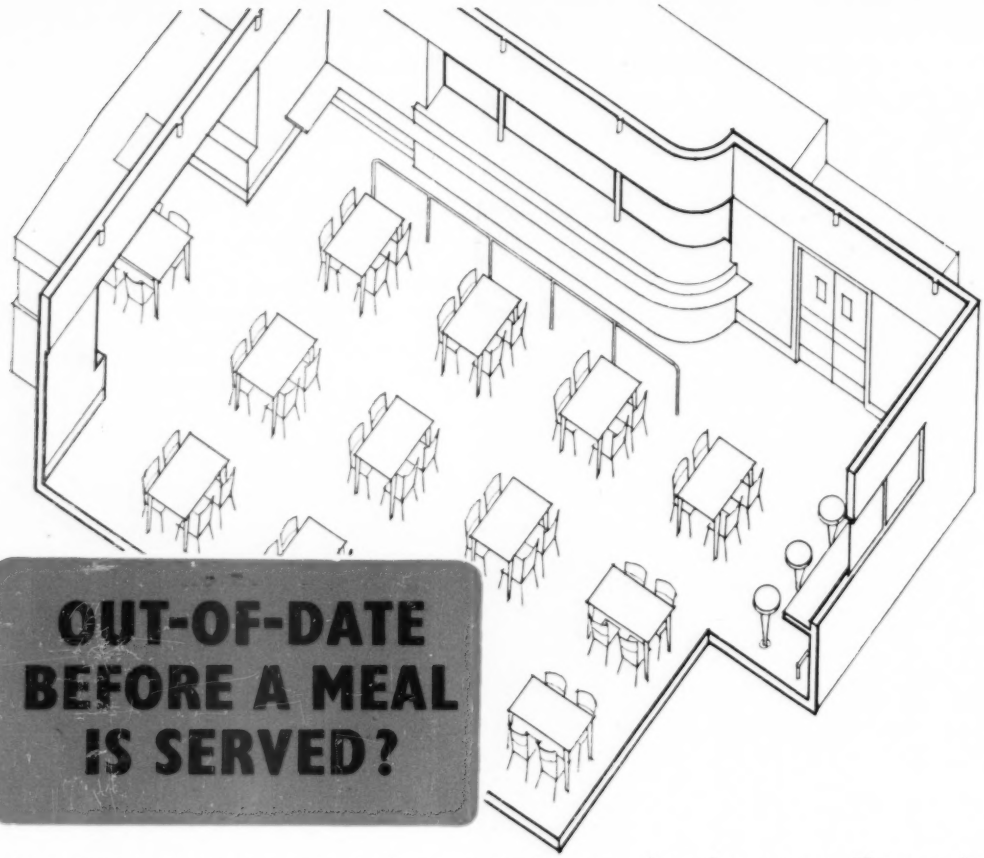

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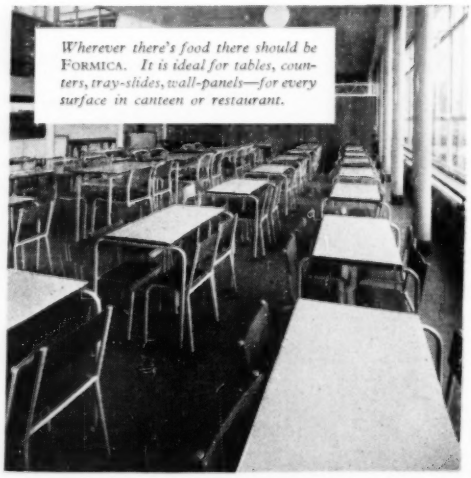
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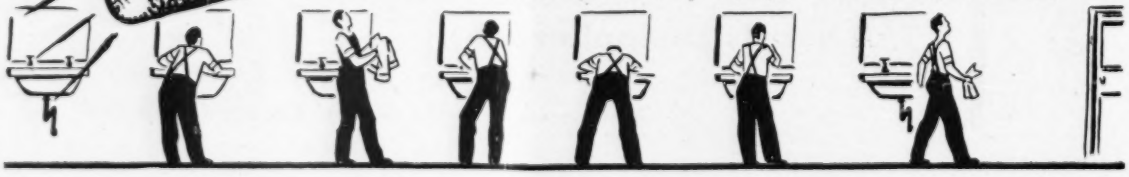

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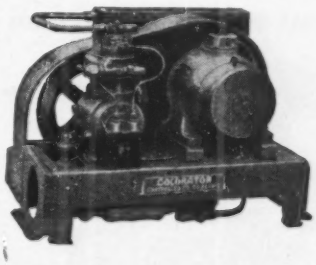

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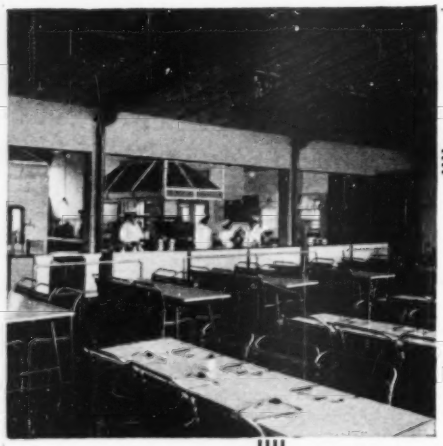

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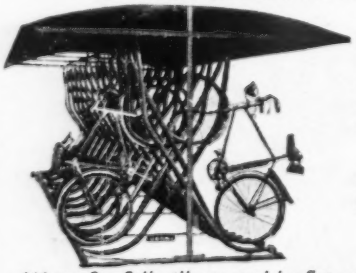

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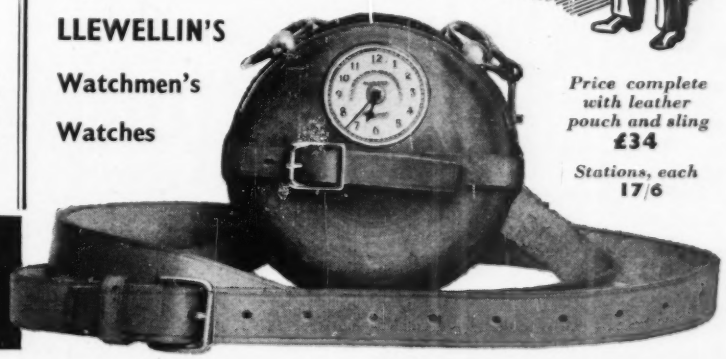

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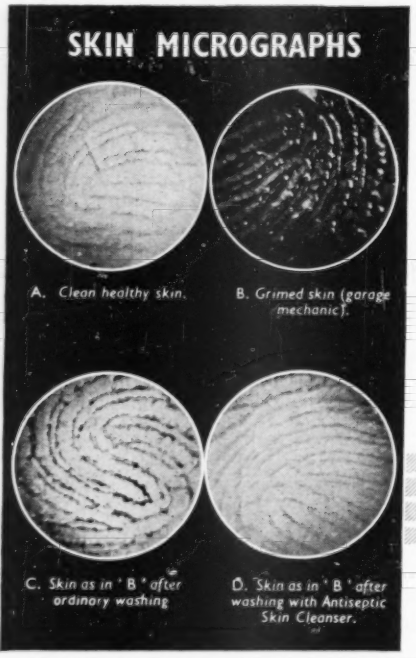
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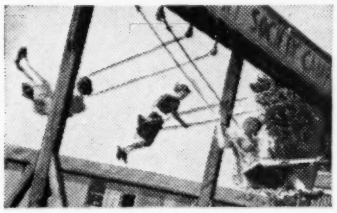

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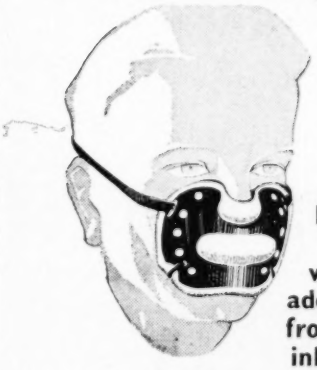

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Vol. 19, No. 1

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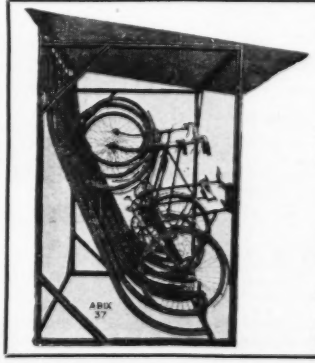

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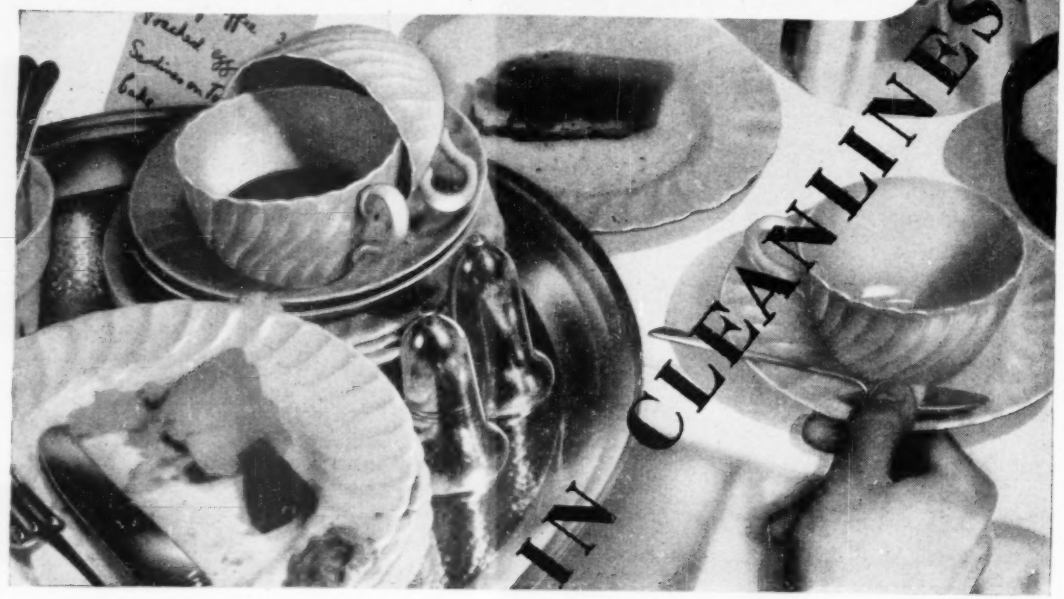

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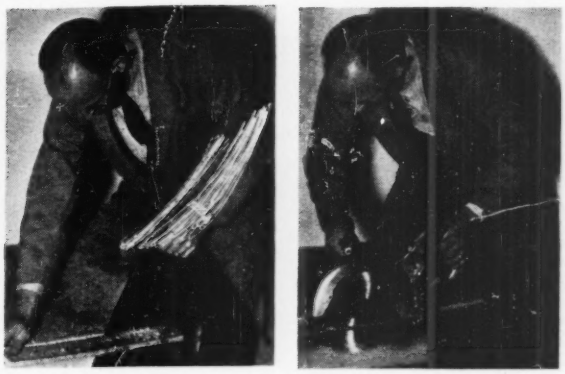
Power Tools Save Time and Effort

By A. G. THOMSON



Sawing a 2 ft. cut in composition board—by hand and by electric saw. The light on the operator's wrist shows the great economy of movement effected by the power tool.

Compact and easily manipulated, modern electric and pneumatic tools result in faster production, less fatigue and greater safety when used on many jobs previously done with hand tools.

EVER since 1861, when compressed air was first used successfully for operating rock drills in connection with the driving of the Mont Cenis tunnel through the Western Alps, power tools have played an indispensable part in engineering and industrial progress. New uses for compressed air are continually being discovered, while the development of small but powerful and highly efficient electric tools has enormously extended the opportunities for speeding up production by the elimination of laborious and time-wasting hand operations.

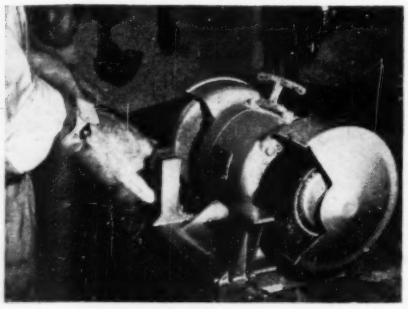
Only one hand is required to operate small electric tools of modern design and no waste of energy is involved in lifting them and maintaining them in position. All the effort of the operator can, therefore, be put in to the drilling and screwing, operation, with the result that productivity is greatly increased. On the other hand, when the operator has to do his job with the aid of a heavy and cumbersome machine, production is slowed down and the same efficiency cannot be attained. This is particularly the case when the operator has to drill at a point above the level of his head. The strain of holding up a heavy tool makes his arm sag, with the result that the hole is distorted and the drill is liable to snap. Another important advantage of small tools is that they can be conveniently used in many places where a larger tool could only be employed with difficulty, if at all. In the construction of caravans—a rapidly growing industry—it has been found that electric screwdrivers can be employed without difficulty in places where screws could not be inserted by hand.

Generalisations about the time and energy saved by the substitution of power tools for the traditional hand methods are easily made, but it is usually difficult to cite specific instances. Some remarkable evidence is provided, however, by a series of special photographs prepared by Black and Decker Ltd., of Harmondsworth, Middlesex, to portray the saving of both time and effort in the use of portable electric tools as compared with hand tools.

The photographs were taken in a darkened room with just sufficient light for the operator to see his work. Strapped to the operator's wrist was an electric lamp, wired to a small battery. At a given signal the operator started work, the camera shutter being simultaneously opened. The shutter remained open while the operation was carried out, so that the light traced a path of the movement made by the operator's hand on the negative. Immediately the operation was finished, a flash-light photograph was taken giving a complete picture of the whole scene. A stop-watch was used to time each operation. Some of the results obtained are given in the captions to the pictures reproduced

What The Stop Watch Showed

	HAND	TOOL
Drilling holes in wood ...	5½ sec.	1 sec.
Drilling holes in metal ...	2 m. 11s.	27 sec.
Drill in stand (on wood) ...	175 sec.	52 sec.
Drill in stand (on metal) ...	273 sec.	36 sec.
Cutting metal	35 sec.	7½ sec.
Sawing in asbestos	15 sec.	2½ sec.
Polisher	3 m. 12 s.	1 m. 33 s.
Refacing valves	35 min.	3 m. 7 s.
Portable grinder	270 sec.	65 sec.
Bench grinder	3 m. 8 s.	12½ sec.
¾ in. standard drill	279 sec.	36 sec.
Heavy duty drill in stand (mild steel)	240 sec.	15 sec.
Hammer	12 sec.	2 sec.
Sander (7 in. heavy duty) ...	20 min.	2 m. 5 s.



The rough cut edge of a piece of ¼ in. mild steel plate was smoothed by a long and laborious filing operation. The close-knit light whorls indicate the considerable effort involved during the 3 min. 8 sec. the job took. To obtain the same result with a 6 in. bench grinder it was necessary only to pass the plate backwards and forwards across the wheel of the grinder in an operation of 12½ sec.

here and in the table on page 15. The material used in each hand and power test was identical and the saving in time and fatigue from using electric tools was very great.

Besides enabling workers to perform operations with greater speed and less fatigue, electric tools are making a valuable contribution to industrial safety, since modern designs incorporate guards which protect the worker against hazards encountered when hand-operated tools are used. Electric saws are several times faster than a well-sharpened hand saw in wood, and can be adapted by changing the blade to cut brick, tile, cement, asbestos, stone, plastics, etc. As the saw advances into the work an automatic safety guard moves back to uncover the blade. As soon as the saw is lifted from the work the lower guard will immediately spring forward to cover the saw blade. Screwdriver bits are provided with a spring-loaded sleeve that encloses the head of the screw and so makes it impossible for the blade to slip.

Wheel guards are fitted to all bench grinders and with detachable end covers make each unit conform to safety regulations. In larger models exhaust vents are fitted and spark shields ensure even greater safety. The wheelguards are adjustable radially and are drilled and tapped in order that eyeshields may be mounted on them if desired.

There are certain metal grinding operations on which a sander, equipped with a saucer grinding wheel, does a smoother and faster job than a portable grinder. A skirt wheel guard protects both the operator and the surrounding area from flying particles and wheel breakage. A semi-circular opening in the "skirt" of the wheel guard enables the work at point of wheel contact to be visibly checked. The guard may be rotated and tightened at any point, so that the visibility opening position suits the operator. As the wheel wears, the depth of the guard should be adjusted so that about ¼ in. of the wheel projects below the "skirt."

The most important factor in the safe operation of electric tools is proper earthing, which is a good habit to develop under all circumstances but is specially important where dampness is present or where abrasive dust is apt to create a short circuit. An electric tool should always be earthed while in use. All tools powered by universal motors are equipped with a three-conductor cable. The green-colour conductor is the earth wire and is attached to the frame of the tool inside the case. If the cable is disconnected from the tool, the operator should make certain that the green wire is reconnected to the tool frame and not to a switch terminal. Where only a two-pin plug is used, this green wire must be connected to a permanent earth, such as an earthed outlet box, a water pipe, conduit, metal frame, or an "artificial earth" such as a driven pipe, driven rod or buried plate, that is properly earthed.

The demand for light, compact tools for the quantity production of aircraft had an important influence on electric tool design. In recent years, however, there have been no radical changes in design though improvements in detail are constantly taking place. The high cost of labour has given a very marked impetus to the use of electric tools, which has increased enormously since 1939. New tools have been developed to meet the new demands which have arisen and today there is an electric tool for virtually every purpose. The range now available includes ¼ in. to 1 in. drills, bench and portable grinders, hammers, nut runners, radial arms, sanders, saws, screwdrivers, shears, valve master refacers, vitrifiers, wire wheel brushes and many other general or special purpose tools.

Black and Decker Ltd. have established a lending library of electric tools for the use of their own employees. If a worker wishes to polish his car or sand the kitchen door before painting, he is able to borrow a suitable tool, and this service is proving extremely popular.

A subsequent article will discuss the uses and benefits of pneumatic tools.

To record the effort on repeat operations, the engineer drills three ¼ in. holes in a piece of 3/16 in. mild steel plate, the three separate operations being recorded as one continuous movement. Time taken 279 sec. The fatigue element is obvious.

Getting the same result with a ¼ in. drill in a stand took 36 sec. Effort is recorded by the three single light streaks shown in the photograph.

The management of a French switchgear firm have led their company to great success by applying an enlightened personnel policy in which each employee is encouraged so to identify himself with the business that he is convinced its interests are the same as his—"La maison, c'est moi."

Management-Men Teamwork Built this Successful Business

By J. W. HAIME, *Personnel Department, Road Haulage Executive, South Western Division*

THE bright, airy canteen reminded one of the restaurant of a large department store. On three sides its wide chintz-covered windows, high above the factory, looked out over a pleasant landscape. Seated on comfortable tubular chairs, a party of British personnel officers were grouped around the *directeur du personnel*, firing question after question at him on rates of pay, piecework, bonuses, turnover, relations with trade unions, works committees, and a dozen other subjects. Aided by a fund of patience and good humour and a couple of interpreters he convinced even the most sceptical that here, at Télémécanique Electrique, had taken place an experiment in industrial relations which had turned out to be a resounding success. The British party had just completed a tour of the works of these switchgear manufacturers at Rueil, on the western outskirts of Paris. What they had seen and heard had shaken most of them, and now they were grilling the personnel director until he revealed what they felt was the inevitable catch . . . but there was no catch.

A few years ago, in a France torn by industrial strife and apparently drifting towards economic collapse, the success of Télémécanique had naturally attracted comment, incredulous and sometimes deliberately misleading. The envious had suggested—what was patently untrue—that Télé commanded a monopoly of their products. But the weight of the attack was directed against the basic principles on which this enterprise, one of the most enlightened in modern industry, was founded.

"Class War or Common Ownership?" This was the headline under which *Figaro*, independent Conservative daily, suggested that the metallurgical workers' *syndicat* was at the back of the undertaking, which, they said, was an example of "management by the unions" with the works council replacing the board of directors. A month earlier, *Franc-Tireur*, a daily more inclined to the left, had announced: "In Télé. factory at Nanterre the workers run the factory —and it works!"

"Catchpenny phrases," writes one of the Télé. directors, "designed to make political capital out of a social experiment which has been in progress for a quarter of a century." And he goes on to give the lie to them by enumerating the six fundamental aims which govern the firm's policy:

1. *To produce marketable commodities.*
2. *To assure the independence of the undertaking.*
3. *To secure the rule of justice.*
4. *To make the idea of the common good prevail over the idea of private profit.*
5. *To make every member fully conscious of his responsibilities.*
6. *Not to allow its social policy to sap the vigour of the enterprise or the authority of the management.*

The first of these indicates that the company is run on commercial lines, and the second that it is out not only to pay its way, but to yield financial control to neither wealthy combine nor powerful trade union. The last disposes of the charge of sovietisation, or management by the workers. The firm's practice shows that these principles are not merely for the shop window.

On the technical side continuous research ensures constant improvement in materials and in the design of the products. In the factories the best use is made of modern tools and layout. Motion study shows the way to greater output with a minimum of useless effort.

The sales organisation, by its close contact with the customer, and by careful documentation and accurate statistical aids, maintains a strong demand and is able to give valuable guidance on the volume and direction of output.

One of the evils attendant on the complex nature of modern industry is the commanding position gradually usurped by finance, and the resulting stranglehold which accountancy has

Welfare and social activities spring from a strong sense of community. Here, Télé. employees are relaxing at their club house on the banks of the Seine.

gained on large undertakings. Internal accounting of increasing intricacy involves ever more highly paid experts and expensive machinery, and drives up the cost of production without adding a penny to revenue. In Télémécanique capital is regarded as subordinate to the enterprise itself. Finance is reduced to the rank of a privileged servant whose wages are paid and whose advice is listened to, but who is never allowed to become a master.

But the firm's success is built on foundations that go deeper than technical, commercial and financial efficiency. "The finest systems in the world," say its founders, "are useless unless you have men of quality at every level capable of actuating them." They have recognised that this is not just a matter of initial selection and subsequent training. It is not even a question of good pay and working conditions, or of the amenities which we group under "welfare."

Good Quality Workers

This is where the other three published aims of the organisation come into the picture. The directors believe, and have based and built up their policy on the belief, that they will only get workers of good quality and retain their goodwill and high efficiency—the quality, goodwill and efficiency which have hitherto guaranteed the success of their business—*if every employee has so identified himself with the firm that he is convinced that its interests are bound up with his own.*

This means, first, fair play. Everyone is brought to realise that he is treated as a person and not as a pawn in some far-flung battle of collective bargaining; that his reward is carefully worked out as a result of the value of his efforts; that his earnings maintain a definite relation to the cost of living; and finally that the profits of the undertaking are shared between him—the man who provides the labour—and the shareholder who provides the capital, not in a scheme of employees' shares, but on an honest-to-God fifty-fifty basis.

How Télé. Get Good Quality Workers

THE POLICY	THE RESULTS
Team spirit built up.	High efficiency.
Good working conditions.	All working for the common good.
Profits shared.	"Men of quality" at all levels.
Job evaluation (all grades).	Low labour turnover.
Minimum supervision.	No pilfering.
Safety precautions.	Waiting list of applicants.
No timeclocks, stores open.	Confidence established between management and men.
Thriving social club.	
Sick fund, free insurance.	

The confidence now firmly established by these means has gone far to bring about the second desideratum: the general assimilation of the idea of the common good as opposed to that of private profit, and as a corollary to it, the acceptance by every member of the staff, from the floor to top management, of responsibility to the whole community for the success of the job assigned to him.

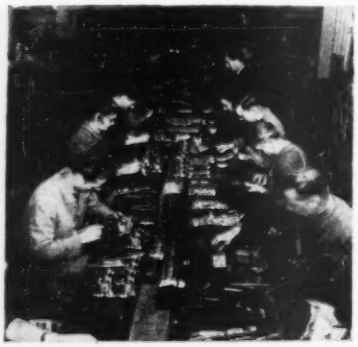
It is impossible here to go into the details of job evaluation applied to all grades of staff, of the monthly determination of distributable profits in a collective bonus scheme, or of the periodical adjustment of the sliding scale of salaries. But it should be noted that the company's accounts are freely open to inspection and explanation on request by the personnel.

In the factory at Rueil the offices are not cut off from the shops but are in a sort of raised glass case right in the middle of the floor. Everyone can see when the managing director arrives or leaves, but no one troubles to look. There is no clocking system. The stores are open, and each man draws what he requires against an order from his chargehand. Pilferage is practically unknown. Supervision is reduced to a minimum. (The saving in wages on these last three points alone must be very considerable.) There is a refreshing absence of those prohibitory notices which, continually posted and habitually disregarded, disfigure the walls of so many factories. Manual, clerical and administrative staff are all paid monthly. Labour turnover is extremely low and there are at present 16,000 applications for jobs against 1,700 employed. There has never been a strike.

Working conditions are of the best. The provision of canteens, cloakrooms and lockers, lavatories and showerbaths, is on generous modern lines. The sick bays are well equipped and provided with medical service. Safety precautions are in marked contrast to the complete absence of them in the majority of French factories. Careful attention is paid to the ventilation and lighting of workshops and offices, and to colouring techniques for machinery. Scrupulous cleanliness is maintained everywhere. Provident arrangements include a contributory sick and benevolent fund administered by the staff; a universal life insurance policy free to all staff, amounting to a year's pay for a married man, with an additional 25 per cent for each child; and a provident institution for senior staff organised by a representative council, which guarantees retirement pensions, insurance against incapacity, and endowments. The sports and social club run by the works council caters for a variety of activities and has a pleasant club house on the banks of the Seine.

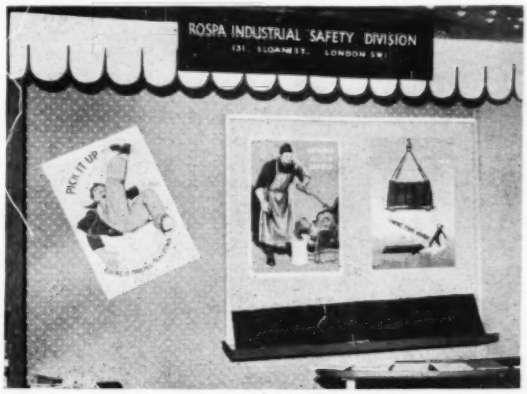
These benefits are not imposed by the paternal authority of the management. They spring from and are upheld by the strong sense of community and live enthusiasm which permeate the factory. These in their turn have grown out of the faith of the founders, translated into everyday practice, that an industrial undertaking is not primarily a money-making machine, but must achieve in the minds of all who share in it its true character as a society of human beings. This is the formula, this is the secret which, by mobilising spiritual forces, has won great material success.

In the words of *Franc-Tireur:* It works!



Motion study has shown the way to greater output. These assemblers sit at their work, with components ready to hand in the central store channel.

More Firms Should Know How Safety Helps Output (Lord Llewellin)



These posters on the Ro.S.P.A. stand in the trade exhibition symbolise the society's two-pronged campaign this year—for safer goods handling and tidier factories.

Ro.S.P.A. Tackle Materials Handling Risks

Over 600 delegates attended the 1952 National Industrial Safety Conference—the biggest yet. They heard their president, Lord Llewellin, remind non-members (especially the smaller firms) how much they had to gain from an interchange of ideas on accident prevention, and reveal that the twin spearheads of the Royal Society's efforts this year would be safer materials handling and tidier factories. They also heard six well-informed papers which should be of the greatest value to all concerned with industrial safety.

SMALLER firms, having 250 employees or fewer, had much to gain from an interchange of ideas on accident prevention, said Lord Llewellin, P.C., C.B.E., M.C., T.D., D.L., president of the Royal Society for the Prevention of Accidents, when he opened the Society's 1952 National Industrial Safety Conference at Scarborough on May 16. Not enough people realised how much the prevention of accidents could do to improve our productive capacity. The technique of accident prevention had been fostered and developed by pioneer firms whose experience was available through the co-ordinating medium of the Society.

Referring to this year's Better Housekeeping Week, to be held from October 6 onwards, Lord Llewellin said: "Many of you know the startling results that can be achieved from a serious attempt to make our factories tidy and safe places to work in. So successful was last year's campaign to tidy up our industry that managers and safety officers everywhere pressed the Society to provide the mainspring for still greater efforts." This year the Society also intended to stimulate interest in safer and more efficient methods of handling materials.

Two of the conference papers were, in fact, concerned with this subject. **The Safe Handling of Materials** was dealt with by C. R. Wynne-Roberts (head of production division, British Institute of Management). Quoting from the 1950 report of the Chief Inspector of Factories, Mr. Wynne-Roberts said that of the 121,000 notifiable accidents occurring that year, no less than 53,378 happened while goods were being handled.

The safest (and most economical) way of handling materials was to ensure that all unnecessary movement was eliminated and that the handling operations were the very simplest possible. The most effective way of achieving these results was to apply the technique of work study—"the most powerful single technique of modern management."

"If there is one thing we can say with certainty, it is that if all the jobs in which the 53,378 accidents occurred had been properly studied, a very high percentage—perhaps as much as 50 per cent—would never have happened, *because the goods would never have been handled.* Proper method study would have eliminated the operation."

Once the number of handling operations had been brought to an irreducible minimum, Mr. Wynne-Roberts continued, then the best method and, if necessary, equipment had to be selected. The simplest movement of all was what Frank and Lilian Gilbreth had called "release load"—the opening of a man's fingers, or a hopper, or the switching-off of an electro-magnet. Gravity could be one of the greatest allies in handling. For some types of presswork a magazine feed, based on gravity, and subsequent ejection down a chute would enable the press to be totally enclosed, with no need for the operator to put his hands near the punch and die. Even in larger presswork, a gravity roller table would enable work to be carried away without human agency. In multi-storey buildings a chute might be elongated and made to carry the work from floor to floor.

Handling should, as far as possible, be kept on one plane. If goods had to be lifted, man—"he is of very limited capacity and liable to various strains if overtaxed"—should only be used for the lightest loads. If manhandling was

unavoidable, workers should be trained in the correct manner of lifting and made to wear the proper gloves, aprons and boots.

One of the most effective pieces of equipment was the simple jib fixed to an upright support and fitted with an electric or pneumatic hoist controlled from the ground. Manual feeding of work to, and removal from, machine could also be reduced with such devices as the "iron hand" illustrated in the report of the Materials Handling Productivity Team.

Planned maintenance of handling equipment was essential for the continued safe operation of equipment, and it should be extended to floors, benches, hand trucks and buildings. Workers should be trained in safe working methods from the start, and care must be taken to choose the right type of person for driving, crane operating and similar jobs involving the use of powered equipment.

Slipping is one of the hazards of materials handling, and in his paper **Slippery Floors in Industry,** F. C. Harper, B.Sc., Ph.D. (head of flooring section, Building Research Station), dealt with the selection of durable, non-slip floor surfaces for new buildings and with the improvement of existing floors. Durability, he said, was the primary requirement of factory floors; other qualities must be regarded as secondary but to be obtained wherever possible. Concrete could be made practically non-slip by introducing carborundum or aluminium oxide into the surface layer. Clay bricks or tiles could be finished with a roughened surface either by introducing hard materials into the clay before burning or by moulding a pattern on the surface. But such methods were not practicable in industries where a rough surface was unacceptable for hygienic reasons (as in dairies and breweries).

Choosers of floor materials must remember that some materials (e.g., cast-iron and steel plates) which were non-slip when new became very slippery in use. Others wore unevenly.

"It is best to provide the same floor finish throughout the plant," said Mr. Harper. "No matter how slippery a floor may be, people become accustomed to it and can walk safely by adjusting the length of their pace. The danger of slipping is greatest where two surfaces of widely differing slipperiness adjoin." In factories handling liquids, the floor had to be sloped to the drains. Usually a slope of 1 in 80 was adequate but in the chemical industry 1 in 40 was often required. The risk of accidents increased with the steepness, and layouts should be designed so that traffic moved *across* the slope. When laying out machinery, it should be remembered that sharp corners should be avoided where possible.

The simplest method of treating old floors was to roughen the surface. Concrete could be roughened by scouring with a coarse abrasive block or by treating the surface with sawdust soaked in dilute hydrochloric acid (one volume of commercial acid to five volumes of water); bricks and tiles by scouring with abrasive but not by using acid; iron plates by welding small whorls of metal to the surface. Roughening had only a temporary effect, however, and it was often more satisfactory to lay a new non-slip finish over the old surface. Compositions of cement and aggregate gauged with an emulsion of bitumen, polyvinyl acetate or rubber latex were the most generally useful.

Sometimes — especially round machinery—it might be better to use non-slip finishes of relatively low durability and to renew them when necessary in the course of factory maintenance. Skim coats of cement rubber latex with cork aggregate, or floor paints, alone or mixed with a filler such as cork, carborundum or sand, could be used in this way. Glues sprinkled with sand had been used in America. Paper and fabric sheets coated on one side with abrasive grains set in a waterproof syntheic resin could be stuck to the floor and were easily replaceable. Where there was little traffic other than the movement of the operator, duck boards or perforated mats, sunk in the floor to a common level, could be used; the well in which they were sunk might serve to collect stray oil or pieces of swarf, which were dangerous lying on the floor.

Maintenance is Vital

Here again maintenance was vital. The factory floor should be cleaned as scrupulously as the mechanical plant. Machines for sweeping, washing, scrubbing and drying floors were available, and they reduced the time and labour involved and need not interfere with the plant operators.

Correct training of employees is essential for the safe operation of materials handling equipment and all other plant, and in his paper **Training Techniques,** R. N. Le Fevre, M.Inst.Gas E., A.M.I.Mech.E. (training and education officer, North Thames Gas Board), listed these "fundamentals of instruction":

INTEREST—capture early and *hold*.
BUILDING—on a known foundation and in a logical manner.
ACTIVITY—the class must DO and THINK.
TESTING—to prove foundation, test progress, etc.
REPETITION—to ensure proficiency and retention of skill or knowledge.

"People learn through their senses," said Mr. Le Fevre, "and the more senses we employ in transmitting instruction, the better." The method of instruction adopted depended on the subject and on

(*Continued on page* 39.)

Part of the 600-strong attendance at the Spa Theatre, Scarborough. Third from left in the front row is Sir George Barnett, H.M. Chief Inspector of Factories (wearing glasses).

Preventing Fire and Explosion

Last month the author described how the photo-electric cell is used as a machinery guard. He now deals with further applications of this versatile equipment—as a preventive of fires, explosions and contaminated air.

By ANDREW JARDINE, F.R.S.A., A.M.I.E.S., (Scot.), M.Inst. W.

FOR speed in raising a fire alarm and, if necessary, setting in operation the means of fighting the fire the photo-electric light cell provides adequate protection, one standard unit automatically safeguarding an area of approximately 6,000 sq. ft. This is how it works.

One or more beams of light are projected over the area to be protected, thus ensuring that an immediate alarm is given should any smoke enter the rays. The equipment is so set and balanced that changes in atmospheric conditions, such as fog, and in light intensity, will not set off the alarm.

Electronic equipment is particularly suitable for installation where materials liable to spontaneous combustion are stored, since such materials usually smoulder for some considerable time, giving off a light smoke, long before sufficient heat is generated to cause flames. The alarm is therefore raised before the fire really starts. Should the electricity supply fail, the equipment would automatically give the alarm, thereby attracting attention to the fact that all was not well.

Clearing the Air

Further, the equipment can be used in tunnels and workshops to give a warning, or to start fans clearing the atmosphere, should the air become polluted by fumes or other extraneous matter. The first application of this type of visibility control was in the Mersey tunnel. The exhaust air from the tunnel passes through the light ray and when the density of the fumes reaches a predetermined limit, the fact is indicated in the control room. Fresh air fans are then brought into operation. Thus, the air in the tunnel is always kept fresh, but there is no waste of fuel as there would be if the fans were running continuously.

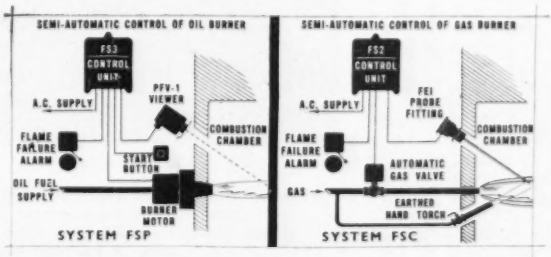
Most explosions in coal-gas-fired ovens and furnaces are due to the ignition of accumulated unburnt gas; a very few to inflammable vapour given off by the articles which are being baked. The obvious precaution in all cases is to maintain efficient ventilation. Some two-thirds of the explosions occur during lighting-up, when there is a delay in applying the light to the burner after the main supply cock has been turned on. Others are due to incomplete lighting-up, and some to flame failure after lighting-up.

Anti-explosion Precautions

There are three precautions which can be taken to avoid this type of explosion. One is to provide a pilot flame connected to the main jet in such a way that no gas can pass to the main burner until the pilot flame is in position. The second is to install low pressure cut-off valves. The third involves the use of a photo-electric light cell, which functions by the direct observation of the flame itself. Action in the case of failure is immediate and efficient. The same cell is used to ensure that the pilot flame is in the correct position before the gas is passed to the main burner. As in all other types of electronic equipment, a source of light must fall on the very sensitive light cell. For successful operation a flame from a $\frac{3}{16}$ in. bore tube, approximately $1\frac{1}{2}$ in. long, is required, and it is usual to operate from a pilot as described, rather than from the main flame. The equipment can be connected to operate an automatic valve in either the main gas line or both main and pilot lines. This equipment in a modified form can also be used for oil and pulverised fuels.

There are certain gas flames, such as coal gas from a non-luminous burner, methane, water gas or producer gas which are not sufficiently luminous to affect the ordinary photo-electric cell, and a special unit has been designed to deal with them. It operates on the principle that a flame is a partial conductor of electricity. By ionising the air in the immediate vicinity, it makes the air a conductor. Electrically connected to the control unit is a probe, of high temperature steel, which is projected into the pilot flame, thereby completing a circuit via the flame to earth and operating a relay which is maintained in the open position so long as it is energised. Immediately on flame failure, the valve closes. This unit is extremely sensitive and positive in action.

HOW THE MAGIC EYE WATCHES A FURNACE



System FSP—Semi-automatic control of oil burner using a photo-electric cell. System FSC—Semi-automatic control of gas burner using a probe fitting.

This Firm Guarantees Employment

EMPLOYEES of Thomas Hedley and Co. Ltd., are guaranteed regular employment, a share of the profits, and pensions. These are keystones in the building of good employee relations in which the firm believe, not simply as a matter of policy or utility but because they like it better that way.

The guarantee of regular employment extends to all hourly-paid workers who have at least two years continuous employment with the company and are not less than 21 in the case of men and 18 for women. This amounts to a promise of not less than 48 weeks' work in each year for the rest of their working lives. Time lost by annual and statutory holidays, voluntary absence, absence due to sickness or injury, or due to fire, floods, strikes or other emergencies, may be deducted from 48 weeks. The company undertakes to do its utmost to maintain this guarantee but reserves the right to modify or withdraw it at any time.

The profit-sharing and pension scheme introduced last year amended previous pension arrangements by providing a scale of contributions varying with the basic wage instead of at a fixed rate. Contribution for wage rates under 100s. a week is 2s. 6d. This increases by 5d. for every 12s. 6d. above 100s. basic, and the company's contribution is increased accordingly. In addition, the company makes a further contribution under their profit-sharing arrangements. Where the profit for the year (before taxation) is 80 per cent or more of the average profit of the two previous years, the company's contribution to pensions is increased on a sliding scale ranging from 20 per cent to 100 per cent. The lowest additional contribution arises when profit is between 80 and 90 per cent of the average of the previous two years, and highest when profit reaches 120 per cent of that figure.

(Condensed from *Co-Partnership*, Spring, 1952.)

School for Wives

U.S. MACHINE CORPORATION, realising that wives of salesmen may become resentful of the demands of the company on the men's time and interest, decided that by proper training and information this attitude might be overcome and the wives schooled to become enthusiastic helpers.

Nearly fifty wives of sales managers and dealers were given a week's training at the company's offices and works. The course was similar to that given to the men, and included lectures on sales fundamentals, retail sales presentation, etc. According to the company's sales promotion manager: "No speaker ever found a more responsive or attentive audience. Their concentration, and the way they took notes, set a standard by which many male trainees would suffer."

(Condensed from *Sales Management*, 15/3/52.)

Pension Safeguards

DOLCIS Shoe Co.'s non-contributory pension scheme safeguards employees against loss of earnings, on which pension is based, by taking an average assessment of earnings over 5 years, instead of over the final year only. Pension amounts to half-pay for employees with 20 years' full-time service, half this rate for 10 years' service, and in proportion for periods between 10 and 20 years. A man can retire at 65 on half-pay, and a woman at 60 on two-fifths pay.

Dream Flats for Staff

"DREAM FLATS" was how the local Press described the flats provided by John Barker and Co. Ltd., London, for some of their women staff. The flats are situated in a Kensington square, in an old house which was converted in 1950.

Each flat is self-contained and has a large bed-sitting room, well-equipped bathroom and kitchen, central heating, and all modern conveniences. Flats are furnished by the occupants themselves.

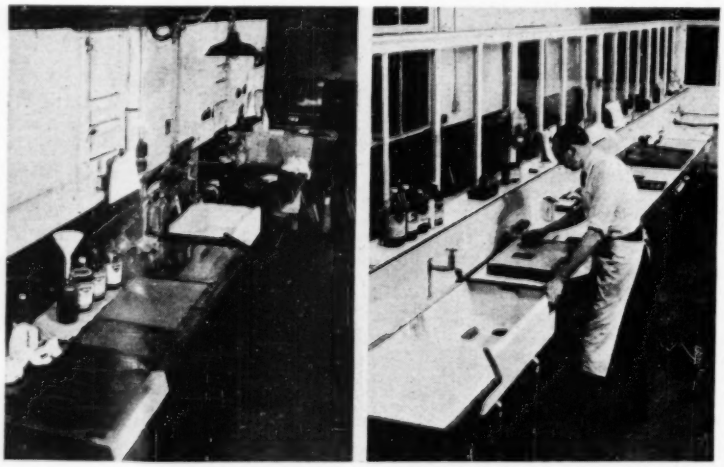
Farm Forum

TWO "farm forums" have been held in the canteen of Rubery, Owen and Co. Ltd., Darlaston, to give farmers an opportunity to answer their critics and to bring about a better understanding between farm and factory. The idea is being followed up by other Midland works. It is also proposed to arrange visits to farms where parties of factory workers can see their products in use in the fields.

Employing Ex-prisoners

UNLESS some employers will engage a discharged prisoner he has no alternative but to turn again to crime. But is it fair to the other employees? Nobody can say whether a discharged prisoner will go straight in future, but there is a reasonable chance that he will. The prisoner differs from many of us only in the fact that he has been caught. Little more than half of them have committed offences involving theft or fraud. More care must be taken in giving an ex-prisoner a position of trust, but even this has often proved successful. The type of crime must also determine the effect on employees. It is obviously unfair to put

NEW LAYOUT IMPROVES EFFICIENCY



(Thomas de la Rue and Co. Ltd. photo.)

After this London photo-litho. process department had been redesigned and renovated, the management found that their operatives were showing greater efficiency and enthusiasm for the job and taking a much greater pride in keeping their workplace clean and tidy.

a pick-pocket with a group of workers without first obtaining their agreement.

Should the discharged prisoner's past be kept secret? A satisfactory solution has been adopted by an engineering firm employing about 1,000. The management has discussed the problem of employing ex-prisoners with the works council, who have agreed in principle to accept them. The result is two-fold. The man knows that if his secret leaks out his mates are not likely to turn on him and he works better without this fear. If other employees do get to know, they are far more likely to help him, and in fact the company's experience has proved this to be the case.

The need for proper selection and placement of the discharged prisoner is even more important than with the ordinary employee, if he is to settle down in the job and make good. (Condensed from *Personnel Management*, 3/52.)

Monday Meetings

ALL grades of staff—secretarial, sales, personnel—at the London office of Crompton Parkinson Ltd., are given the opportunity of getting to know about the technical and scientific aspects of electrical manufacturing at the monthly "Monday meetings." Talks are illustrated by films and demonstrations, and before each meeting a buffet meal is provided by the company.

100 Years' Peace

OVER 100 years without an industrial dispute is the proud claim of Thomas Walker and Son Ltd., Birmingham, nautical instrument makers. This family firm has managed to maintain the old happy relationship between master and men which has tended to disappear in modern, large-scale organisations.

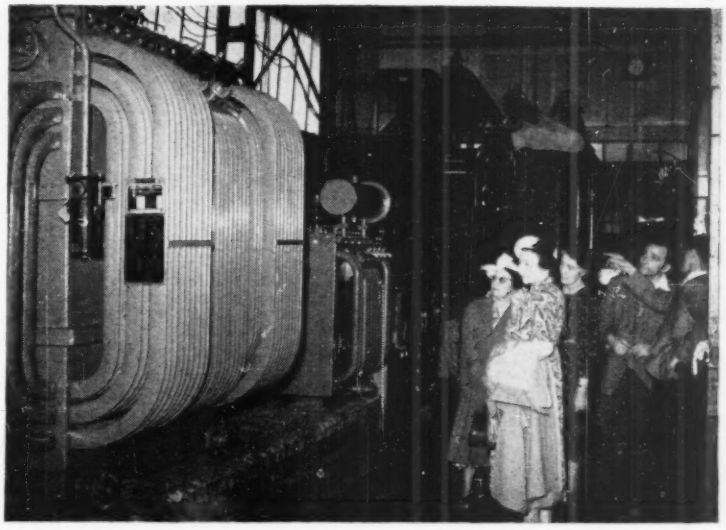
New Machines for Old

TO overcome the shortage of machine tools, urgently required for defence contracts at the Cadillac Tank Plant, Cleveland, U.S.A., management decided to make their own. They dug up old machine tools from ordnance department dumps, from used machinery dealers and from other plants, and handed them over to their own machine repair department. Here they were re-built or repaired, tested, and put into commission in production departments.

All parts of the old machines were labelled, and unused parts stored for future needs. Stocks were kept of parts with a high mortality rate, but parts which could not be bought, or on which there was delay in delivery, were made by Cadillac themselves.

(Condensed from *Factory Management and Maintenance*, 2/52.)

"OPEN" TO FRIENDS AND RELATIONS



More than 700 relatives and friends of employees of Foster Transformers and Switchgear Ltd. accepted the management's invitation to tour the company's Wimbledon factory. Employees volunteered to work at their normal everyday jobs and explain the technicalities to visitors.

Ideas & News from House Magazines

Loyal Service

Over 800 years' loyal service was represented at the fourth annual dinner held by the Old Timers' Association of Delco-Remy-Hyatt. Each member with 25 years' service or more received a silver badge, and two new members were presented with gold watches. **(Delco News.)**

Built Their Own Club

Members of the Central Sussex Electricity Board wanted a social club, so they built their own. They purchased a second-hand ex-Government hut and reconstructed it by volunteer labour.

A brick and concrete base was built, the hut—timber and corrugated iron—was erected, heating and lighting installed, and the whole affair decorated. A bar, billiards tables, dart boards, etc., completed the job. Every kind of money-raising effort was run by the members, who met the major part of the cost. **(Seaboard.)**

Prices Up—And Why

Prices of meals in the David Brown Companies have risen only 14 per cent since 1939, but it has now become necessary to increase these further. Reasons given are comparative food costs between 1939 and 1951. Price of meat has risen by 195 per cent; vegetables by 345 per cent; fish by 170 per cent; cheese by 216 per cent; butter by 114 per cent; margarine by 288 per cent; and sugar by 110 per cent. **(News Letter.)**

Supervisors Must Show How

A reduction of thirty-nine in lost-time accidents, from 269 in 1950 to 230 in 1951, is reported by the safety department of Vauxhall Motors Ltd. The number of eye and foot injuries, injuries from falling objects and from handling, all decreased, but injuries from persons falling and machinery accidents increased.

The report states that machine guarding alone is not enough, and the management has undertaken a programme of supervisory training which stresses greater personal contact with operators. **(Vauxhall Mirror.)**

PLESSEY CO. LTD., have opened a new social club at Swindon. The club includes a main hall accommodating 200, and provides facilities for billiards, table tennis, dancing, etc., for their 2,700 employees.

CIVIL DEFENCE

How We Built up a Nation-Wide Defence Scheme

By J. T. PETRIE

Chief Civil Defence Officer, Unilever Ltd.

Anticipating the call from the Government, Unilever Ltd., set about resuscitating their Civil Defence organisation a little over a year ago. Today a keen force of volunteers, 1,800 strong, have just finished their basic training and will soon be learning their sectional duties. Between them they have forty major establishments spread throughout the country to defend.

One of 1,800 trained Civil Defenders. A Unilever employee tests for contamination with a pocket gas vapour detector.

LESS than fifteen months ago the Civil Defence organisation within Unilever Ltd. was no more than a memory and a dusty official record of what happened last time. Now there exists the framework of a nation-wide defence scheme embracing forty major establishments and a vigorous force of 1,800 volunteers. The reasons for this change and how it came about are briefly explained in the story that follows; but first it is necessary to examine the original problem.

Unilever Ltd. have many factories and mills in all parts of the British Isles employing tens of thousands of staff on the production of a great variety of commodities, involving a great variety of processes. Many of these plants were held to be of vital national importance in wartime; general economic aspects were to be taken into account, and the responsibility of an employer for his staff considered. It was decided, therefore, to create and develop a Civil Defence scheme that would apply to all the company's main premises, with the object of maintaining production and preserving life, plant and buildings. The limiting factor was that all C.D. arrangements were to be kept in their correct perspective, consistent with the international situation, production, morale of the employees and expenditure. The scheme then developed step by step in logical sequence.

First, a full-time Chief Civil Defence Officer was appointed. His task was to plan and co-ordinate all C.D. operations within the concern and to maintain liaison with the main board in London, the Home Office and other Government departments.

Finding Instructors

Each of the forty factories, mills and offices was asked to appoint part-time officers to supervise Civil Defence arrangements in their own units and to liaise with local authorities, public services and neighbouring industries. Candidates who were prepared to undergo a course of training to become general instructors were also nominated.

These events took place in the spring of last year. About that time it was discovered that two other industrial undertakings with similar problems were planning on the same lines, and after discussion it was decided to pool resources and run two courses to train general instructors up to green certificate standard. The companies provided their own lecture rooms and training grounds, and used the services of their four white certificate instructors, who had previously been qualified at Home Office technical schools. Each course was attended by forty students and lasted ten days, at the end of which the candidates were examined by representatives of the local county organisation.

Using their own facilities, Unilever subsequently ran further courses, with the result that by late summer they were able to claim sixty-five qualified general instructors, a proportion of whom had been granted vacancies on short conversion courses at the Home Office schools.

The Plan Takes Shape

During the summer training equipment was bought and delivered to each factory, the details of a six-months' general basic syllabus were worked out, and peace-time establishments of volunteers suggested to each unit. The Chief C.D.O. made a personal tour of each of the forty centres, and outlined the scheme as a whole to local managements and

discussed special local problems with unit C.D.Os.

With the ground thus prepared, all was ready to call for volunteers. A personal approach was made to the staff to explain the scheme and conditions of service and within six weeks nearly all units reported their peace-time establishments (about 40 per cent of wartime strength) had been recruited. In November all units embarked on a training programme which has just been completed.

Basic Training

Training takes place out of work hours and each volunteer is expected to attend one period of instruction a week, for which he is paid a subsistence allowance of 3s.. The syllabus of twenty-four hours, which has been taught to all volunteers regardless of the section which they ultimately join, was divided into fourteen hours' general basic Civil Defence, six hours' first-aid, and four hours' revision, special request and test periods.

No training is taking place during the summer, but the C.D. force in each unit is being broken down into four main sections: wardens, fire-fighting, first-aid and rescue, preparatory to the first year of section training, which will start in October.

A suggested syllabus for each section has been worked out and sent to each C.D.O., whose responsibility it will be to adapt the syllabus to suit the circumstances of his own particular unit. In general, the warden's section will be trained by the C.D.O. and general instructor, the fire-fighting section by the senior fire officer on the site, the first-aid section by the works' own surgery staff and St. John's Ambulance personnel, and the rescue section by the instructors who qualify at special courses now being run.

When a certain amount of section training has been carried out it is hoped to be able to arrange combined exercises with the local division of the corps and neighbouring industries. In addition to the training of instructors and volunteers, a two-day staff course has been run at Ashridge College, Berkhamsted, for the benefit of thirty-two of the concern's C.D.Os.

With the aid of models, a Unilever C.D. instructor gives his squad the latest information about the clothing which would protect them against gas, radioactive particles and germs.

An instructor on the basic course demonstrates the correct method of rescuing a casualty from a smoke-filled room. Unilever Civil Defenders will start their sectional rescue training in October.

LETTER TO THE EDITOR

"Tell us about your Tea Break"

Sir,

From our viewpoint as an organisation representing the tea industry and working largely in an advisory capacity to further the interests of tea, one of the more striking developments in working conditions during the last ten or twelve years has been the substitution of well-planned and carefully organised works' tea and refreshment services for the surreptitious procedure very prevalent some years earlier.

This whole subject of "tea at work" looms so large in our industrial picture that inevitably, perhaps, it is often used as the peg on which to hang allegations of time-wasting. It is rarely that those who so use it speak either with the authority of experience or indeed with any critical study of the situation they deprecate.

No-one, of course, would wish to defend time-wasting which is the product of indiscipline or fostered by ill-planned and inefficiently operated refreshment services. Unfortunately, such cases have a "sensation value" not possessed by the tea services of the great many concerns who are proud of their arrangements and regard them as an important asset in their production efforts. Many of these are known to us personally as the result of our industrial and commercial advisory work, but we are anxious to build up our list of the principal firms and organisations who come within this category.

To this end we would seek the assistance of your readers. *We would be grateful if they could give us some information on those employee refreshment services with which they are personally concerned and would let us know of the value which they attach to them as a welfare amenity and, therefore, as an aid to production.*

We would emphasise that this information is not required for any commercial end, but to help in refuting unjustified charges levelled against British industrial efficiency.

Yours, etc.,

D. M. Forrest,
Commissioner.

The Tea Bureau,
22 Regent Street,
London, W.1.

Can Industry Employ the Tuberculous?

A "P. M. & W." Industrial Health Investigation

By Dr. A. T. BYRNE

The Ministry of Health are encouraging the employment, subject to many safeguards, of persons with infectious lung tuberculosis. The author weighs up the pros and cons of such a policy, reports the practice of several large firms who have come up against this problem, and concludes that, whether or not the Ministry's suggestion is taken up, compulsory chest radiography of all job applicants is highly desirable in dealing with tuberculosis in industry.

THE placing in ordinary employment of persons with active tuberculosis of the lungs is being encouraged by the Ministry of Health. The Standing Tuberculosis Advisory Committee has advised that there is no general bar to the employment of such workers provided that their placement is subject to medical guidance and approval.

A departmental circular addressed to all local health authorities states that experience has shown that no harm has come of admitting to ordinary employment tuberculous persons whose condition may be infectious. The work allocated to the individual must, however, in medical opinion, be suited to his physical capacities and unlikely to jeopardise the health of himself or others; the worker must also be a person who can be relied upon to exercise that personal care that tuberculosis patients are trained to take.

The purpose of the circular is to apply the principles of the Disabled Persons (Employment) Act, 1944, to the occupational resettlement of the tuberculous. When the ex-patient registers in search of employment the Disablement Resettlement Officer will receive from the attendant Chest Physician an assessment of the applicant's capacity. Then, when a job is found, the matter is referred to the Medical Officer of Health, to whom the clinical details are communicated. Consultation between these two doctors with, preferably, the patient's own doctor, will follow before the suitability of the job is decided.

So far so good. But the employer now remains to be convinced of the desirability of this whole scheme. Here, therefore, he may reasonably ask to what extent is the project practicable? The implicit sanction of the Ministry is modified by so many provisos that it might easily be felt to be completely vitiated.

What classes of work will be found to meet the requirements? Those found in the heavy industries and mass production can be ruled out at once on account of the fatigue risk; then, dust-producing occupations may be injurious to the worker; while the handling of food and items such as cigarettes may be ruled out on public health grounds. So, for the approved occupations one turns to those that have been tried and proven in the various tuberculosis settlements and factories where woodworking, leathercraft, printing, upholstery and small-parts assembling are carried on.

Ford's (U.S.A.) Experience

In addition to the latter group there are, of course, numerous jobs in commerce and even in industry that will not unduly tax the worker physically. (An industrial example comes from Ford's U.S.A. plant, which employs over 1,000 tuberculous persons. There an analysis showed that out of the 7,882 kinds of work available, 45 per cent could be done by girls or juveniles.) But general categories of work are of little guidance since the specific suitability must be assessed for each individual case.

Besides, finding the worker a job to suit him is only one of the employer's worries. If the worker is infectious, and we are assuming here that he is, the risk that he represents to fellow employees depends not only on the nature of his condition but, to a large extent, on his own social behaviour. How can an employer be assured that any person in his employ will take all the necessary precautions to prevent himself from infecting others?

The risk from the "open" case of lung tuberculosis in factory or workshop is a very real one. A recent survey in Northamptonshire factories showed that in about 40 per cent of the cases of tuberculosis discovered the critical infection occurred in the factory. Home contacts were responsible for only about 25 per cent of the same total. Another study confirms the belief that the larger the room or workshop in which mutual infection is taking place the greater the hazard run by the individual. Add to this the fact that the number of infectible juveniles in industry is on the increase, and one can well understand the employer's thinking twice before accepting the responsibility of engaging the infectious applicant.

So much for some of the theoretical

considerations involved. What is the practice of employers at present? To provide an answer, however incomplete, the medical officers of five large industrial concerns, two of which are world-wide organisations, were interviewed.

They were asked:

1. *Do you admit to employment new applicants with infectious tuberculosis?*
2. *Do you re-admit workers who have become infected since their original engagement?*
3. *Is the applicant for work subject to a medical examination with X-ray of chest?*
4. *Do you receive many applications from D.R.Os. on behalf of applicants with open tuberculosis?*

All five firms gave the same answers to these four questions. They will not engage the applicant with infectious tuberculosis. The employee who incurs infection, however, is treated with great consideration, receiving sick pay for periods depending on the length of employment. When he re-applies after treatment he must agree to the firm's medical officers being supplied with a full clinical report from the attendant specialist. Rehabilitation is provided before return to full work.

Re-engagement Procedure

On first application the worker is subject to a clinical examination which takes into consideration the type of work envisaged. If there is anything suspicious in the history or disclosed by examination, the examinee is sent for chest X-ray. Otherwise this is not generally done as a routine measure. Applications by D.R.Os. on behalf of actively infectious workers are very rarely encountered.

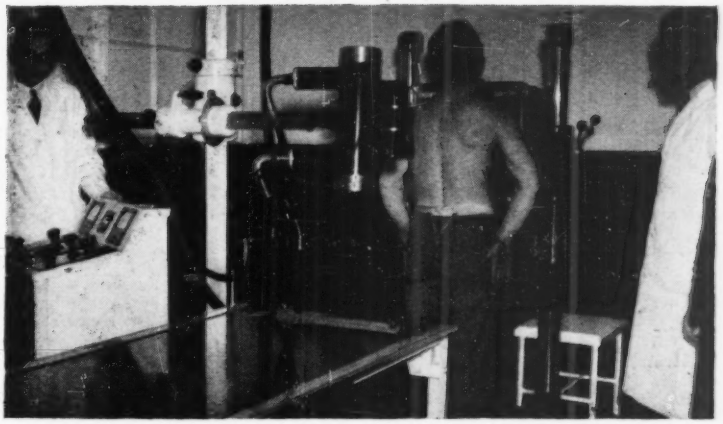
The five firms approached were fairly representative and employ an enormous total of persons, but one dare not deduce much from the replies, since the interrogation did not disclose any concern willing to take on infectious workers. Perhaps from that very fact one may be justified in assuming that there is at least no great desire on the part of employers to take on in the first instance sub-standard labour of this kind with all its attendant anxieties.

The fact that applicants do not appear commonly to enlist the aid of the D.R.O. tends to confirm the view of other writers that many tuberculous persons refrain from registration when looking for a job. If they contrive to slip unobtrusively back to work they escape some embarrassment and possibly unwelcome supervision; but by refusing to declare their condition, not only do they expose others to an unknown risk, but they themselves may be given work that may prove their undoing.

Even the most careful physical examination will not always disclose the existence of possibly advanced tuberculosis of the lungs. For complete security radiography is required. Yet it seems that pre-employment radiography is the exception rather than the rule.

Ideally, every prospective employee, before being accepted, should be obliged to submit to chest radiography with the agreement that the result should be communicated to the employer's medical officer. That would exclude the risk of adding a possible infector to one's staff and enable the applicant, if infected, to be treated earlier than would be on waiting to be discovered in the course of voluntary, periodic mass-radiography examinations.

If this procedure is generally inadmissible on economic grounds, it would, at least, appear to be imperative in those cases where an employer has suitable work to offer and is willing to take the risk of employing possibly infectious persons among his staff. News of such employment would soon traverse the grapevine of the sanatoria; but by no means all the applicants should be expected to give a perfectly frank history. Assessment by compulsory radiography, then, would help the employer's medical officer to decide on the suitability of any type of work. It would also be a protection for the employer against the claim that the disease was acquired on the premises.



Whether the employer does or does not engage workers with infectious tuberculosis, the principle of compulsory chest radiography before accepting any applicant is worth consideration, says the author. Often it would be possible for firms to share the expense of doing this—and earlier diagnosis will mean less expenditure on sick pay.

Compulsory X-ray?

In short, whether the employer does or does not engage workers with infectious tuberculosis, the principle of compulsory chest radiography before accepting *any* applicant for work is worth consideration. The complaint of expense can be answered in some industrial districts by the sharing of diagnostic facilities. Where a firm can afford the installation of a "miniature" plant, the photographic technique can be easily learned by the medical officer who may, if necessary, refer the microfilms to an expert for assessment. Earlier diagnosis will mean reduced expenditure on sick pay and a better outlook for the employee on returning to work.

If we are to deal decisively with tuberculosis in industry it is better to nip the menace in the bud than to wait until the task of its control calls for the use of the two-handed saw.

Talented Employees

Singing and acting with professional polish, 100 members of the Laundry Industry Operatic Society performed "The Vagabond King" at the Scala Theatre, London, from May 22-24.

Pressure for Pay Rises Continues

IN spite of the Chancellor's appeal for wage restraint there is no doubt that, whatever the attitude of the General Council of the T.U.C. on this question, some unions are determined to oppose any "wage freeze." Spearhead of the campaign was the engineering unions' claim for an increase of £2 a week, and the railway unions' claim for an all-round increase of 10 per cent, as reported last month.

Further demands are still forthcoming, and details of the latest claims are given below:

FOUNDRYMEN—Members of the Amalgamated Union of Foundryworkers have unanimously agreed to apply, through the Confederation of Shipbuilding and Engineering Unions and the Joint Committee of the Light Metal Trades Unions, for a "substantial" increase in wages. They rejected a proposal fixing the amount of the increase at £2 a week.

HOSIERY WORKERS—Delegates to the conference of the National Union of Hosiery Workers have asked for a revision of their holiday pay agreement. The resolution urged that there should be minimum and maximum pay limits for the two weeks' holiday in the industry.

MINERS—National Union of Mineworkers have asked the National Coal Board for all-round pay increase of 30s. a week. The claim affects 700,000 miners and will cost the N.C.B. between £40,000,000 and £50,000,000 a year.

PLASTERERS—National Association of Operative Plasterers have instructed their executive to seek a wage increase.

SUB-POSTMASTERS — Salary increases have been granted by the Post Office amounting to 10 per cent of the first £500 net salary; 5 per cent on the the second £500; and 2½ per cent on the third £500.

TOBACCO WORKERS—At their conference on June 12 demanded £1 a week rise for men and women, with proportionate increases for juveniles, and payment of adult rates to women at 18.

WOODWORKERS—Delegates to the conference of the Amalgamated Society of Woodworkers decided to press for a wage increase of 6d. an hour. This proposal, which must also be considered by the National Federation of Building Trades Operatives, affects not only the 200,000 members of the society but also 1,250,000 building workers. The proposed increase would raise the rate from 3s. 4½d. an hour to 3s. 10½d. with slightly higher payment in the London area.

"End Living Cost Link"

NATIONAL Union of Furniture Trade Operatives is expected to resist the demand of the furniture manufacturers for the ending of the agreement under which wages in the industry are linked to the cost-of-living index. Furniture manufacturers are the first group of employers to ask that such an agreement should be cancelled.

Catering Wages

THE report of the Catering Wages Commission for 1951 expresses regret that they failed to solve the problems which have arisen in the operation of the Catering Wages Act, 1943, in the hotel industry.

The commission, set up in 1949 to conduct an inquiry into the working of the Act, were asked by the Minister of Labour to consider reforming the wages board machinery and to decide whether adequate representation of all interests could be secured on a single board. Although they made unanimous recommendations, the commission were told by the Ministry's solicitor that under the terms of the Act they could not take the course they wanted. They have now asked the Minister to consider amending the Act to give them the necessary powers.

They also recommend speedy decision by the Licensed Residential Establishment and Licensed Restaurant Wages Board on special wage rates for trainees, apprentice cooks and late entrants.

Dock Labour Costs Fall

ANNUAL report of the National Dock Labour Board for 1951 shows that in spite of a larger labour force, higher rates of pay, increased national insurance contributions, and effects of rising prices, operational costs were £60,000 lower than in 1950. Total cost of operating the scheme was £3,426,088, of which £112,011 was spent on welfare.

The saving was due entirely to the high volume of port work during the year. Employment was provided for more than 63,500 men, nearly four-fifths of the average register of 80,088 workers. This resulted in substantial savings in the payment of attendance money. Gross average earnings of daily workers during 1951 were £9 16s. 6d. a week, compared with £8 12s. 10d. during 1950. Strikes and other stoppages caused a loss of 339,878 man-days.

Govt. "Consider" Equal Pay

EQUAL pay by easy stages is being seriously considered by the Government, according to the Financial Secretary to the Treasury, Mr. J. Boyd-Carpenter, speaking in the debate in the House on May 16. The Minister was replying to a motion that the House reaffirms its belief in the principle of equal pay for equal work, and implement without further delay the motion passed on May 19,1920—which declared it "expedient" that women in the public services be given equal pay.

Paid Holidays for 15,000

JOINT Standing Committee of the Welsh Tinplate and Sheet Trade Joint Industrial Council has granted an additional week's holiday with pay to 15,000 workers. Workers may claim 18 days' holiday at up to 26s. a day.

Holiday Claim

DELEGATES to the annual conference of the Transport Salaried Staffs Association instructed their executive to open negotiations with the British Transport Commission for three weeks' annual holiday for clerical and supervisory staffs with up to 15 years' service, and four weeks for those with more than 15 years' service, with the provision of reliefs to prevent arrears of work.

Unemployment Doubled

UNEMPLOYMENT has more than doubled in the past twelve months. On May 12, last, the total was 467,000 compared with 215,700 a year earlier. But there was a decrease of 400 during April, 1952. The number of workers employed in textiles fell by 23,000, but agriculture manpower increased by 15,000, coalmining by 4,300, distributive and catering trades by 14,000.

The total working population increased by 18,000 men and 16,000 women. Unemployment was lowest in the Midland Region and highest in the North-West.

Productivity Reports

"MECHANISATION is the key, but raw materials are essential to increased productivity in Britain." This is the main conclusion of the report on **food canning,** published by

the Anglo-American Council on Productivity. The team were very impressed by the alertness and cheerfulness of American operatives and their willingness to work long periods of seasonal overtime. American trade unions discourage restrictive practices and favour substantial profits; their function is to see that their members get a fair share of the rewards and proper conditions of work. The team recommend British management to indicate and encourage the will to work by example and by keeping everyone in the picture. Modern machinery and mechanical devices to increase productivity must be accepted by all ranks in the industry.

The team which studied **fruit and vegetable utilisation** found that the American industry uses better machinery and more machinery more ingeniously than does its British counterpart.

Very little job-evaluation is done, time study is rarely used, even for estimating, but managers are well-versed in the basic principles of motion economy. Incentive schemes are not widely in force owing to trade union opposition.

A.E.U. on "Dilution"

WHILE rejecting a proposal that dilution should not be allowed within the industry, the national committee of the Amalgamated Engineering Union have decided to tighten up their policy on this question.

The committee proposed that every application for admission of a dilutee into the industry should be approved by the national executive of both employers and the union. This is a reversion to the 1939 agreement, which has been operated somewhat laxly by both sides. The union expressed particular dissatisfaction with the way in which employers were interpreting relaxation as meaning that a firm need not employ an apprentice-trained engineer seeking employment, and instructed the executive council of the A.E.U. to seek to remove that anomaly.

Family Life Talks

TALKS on pre-marital education and family life have been given by a local clergyman and doctor to employees of Modern Machine Tools Ltd. The experiment was made as the result of a suggestion by the Mayor of Coventry, who is patron of the local Marriage Guidance Council, under whose auspices the scheme is being run. The Council hope to extend it to other factories in the area.

The talks were given over the factory broadcasting system, and dealt with the theme that workers could not be happy in the factory unless they were happy at home. Fair shares for all meant fair shares for husband and wife of rest, recreation, work, responsibility and family income.

Consideration is being given to group talks for apprentices on practical problems before and after marriage, and to articles of advice in works magazines.

Co-partnership Conference

ANNUAL Summer Conference of the Co-partnership Association will be held this year at Girton College, Cambridge, from Friday to Monday, July 18 to 21. Charge, inclusive of gratuities, is £5 5s. Application should be made to the secretary, Industrial Co-partnership Association, 36 Victoria Street, London, S.W.1.

New I.W.O. President

LORD AMULREE has been appointed president of the Institute of Welfare Officers in succession to Admiral the Lord Mountevans, who had to retire because of ill health. F. E. Oldfield was elected chairman of the Council, and A. H. Haynes vice-chairman.

THE MINISTER SAID . . .

Answers to Questions in the House

Class "Z" Reserve

No "Z" reservist over the age of 45 is being recalled for training this year, except in the case of certain specialists who may have to be recalled in exceptional circumstances. (*Secretary of State for War*, May 20, 1952.)

Factories' Self-inspection

Self-inspection of factories, as referred to in the report of the Chief Inspector of Factories (i.e., systematic inspection of processes and plant by supervisory staffs) was being encouraged, but was looked upon as a supplement to, not a substitute for, the ordinary work of the factory inspector. (*Minister of Labour*, May 29.)

Miners (Release)

Instructions were issued to all three Services soon after Easter about the release of ex-miners who were serving in the Far East last year and wished to return to mining. No further consideration could be given to the general scheme of release from the Forces to return to the mines. (*Parliamentary Secretary to the Ministry of Defence*, May 21.)

Non-industrial Workers

The recommendations of the Gowers committee on health, safety and welfare of non-industrial workers were being considered, but it was very difficult to get suggestions which could be translated into practical action. (*Home Secretary*, May 29.)

"LORNA" WINS £250 SCHOLARSHIP

Receiving a £250 cheque which will enable her to take a managerial training course is Miss Margaret Sterne (centre), of Leeds, who was elected the laundry industry's first national "Lorna" in 1947, while working as a packer and sorter. She is now an assistant manageress. On the right is Mrs. R. K. Ross, president of the Association of Women Launderers, the donors of the scholarship.

Decorplast

The summer brings its own problems for the canteen manager. There are pests to deal with, food to keep fresh, hot weather menus and staff holidays to plan, and storage difficulties not encountered in cooler seasons. From her long experience, Mrs. Yeomans offers suggestions for the successful solution of all these questions.

How to Feed them Well in the Summer

By **WINEFRED YEOMANS,** *Catering Manager, Daily Mirror Newspapers Ltd.*

THESE are the problems which have to be tackled during the summer by the canteen manager and his staff. They must be faced and, wherever possible, sensibly anticipated. To keep staff keen and on their toes is not too easy nowadays but it is of urgent necessity that the most intelligent and responsible members of the staff be found and employed henceforth to full advantage—put to the test, if need be, first—in furthering your special summertime tactics.

Pests. Both the ordinary (and filthy) house fly, which excretes as it feeds, and the bar fly which hovers thickly over exposed dried fruit, sweet drinks, preserves and anything fermenting or a bit "off," dislike free draughts of air, scrubbing, anti-fly powder and cleanliness; but so long as their bait is about they can only be got rid of by the scientifically efficient electrical vaporising system.

To attack cockroaches and steam beetles, absolute cleanliness everywhere, especially in cracks and "underneaths" of hot closets, dish washing machines and tabling, behind ovens and steamers, in bread-rooms, etc., is vital. Regular powdering helps but cannot cure, because service interrupts its action.

The remedy again lies with the vaporising device, which dispenses a special powder.

Dust. Do not have dry sweeping done while food is exposed. Where sweeping must be done, cover food with a wet cloth that will hold the dust.

Cooking smells. See that hoods are clean and ducts free. Have exhaust and extraction fans and mechanisms checked for efficiency. Make it a rule that range tops and ovens are kept clean and free of spillage and scraps, for when these become hot they smell horribly. See that the responsible person keeps the deep fryer *clean* and does not allow the fat to over-heat or to be used when dirty. Attend to ventilation of passage ways and canteen hall and dining-rooms. See that drains are regularly cleansed and that disinfectants are *not* applied before or instead of thorough cleansing.

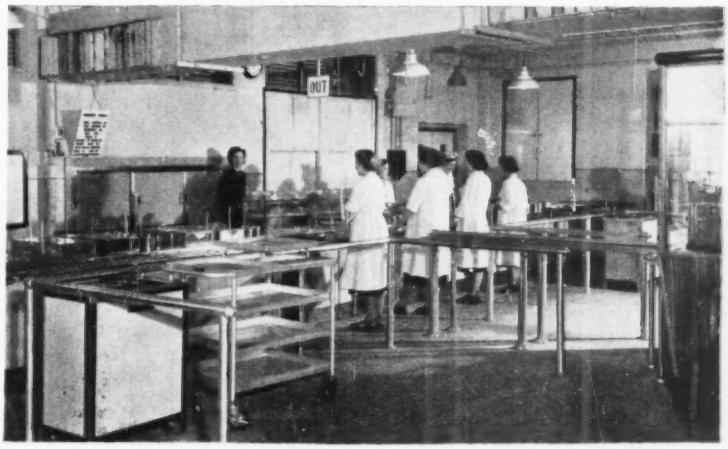
When customers come from hot rooms and shops to their canteen and are therefore touchy about "draughts," snatch a few minutes between breaks to change the air throughout.

Drying-out of confectionery and bread. Unless goods are displayed inside glass cases or beneath clean plastic covers expose as little as possible at a time. Keep a damp, clean cloth over sandwiches and slices, keep cut edges of cake close.

Sprigs of cress and whole lettuce leaves here and there among the sandwiches help to keep them fresh, although if placed in the filling may make the sandwich damp and unappetising. A bowl of bright radishes in salty water and ice serving at "a penny a go," or some watercress laid out in portions on a cloth, will appeal to many.

Cakes are very vulnerable in hot weather to costly deterioration. To prevent this have as many as possible of the individual type, covered. Keep the bread store and cake room clean and cool and dust-free.

Exposure of food in preparation. Cooks and preparation hands must



This bright and airy double-entry cafeteria has recently been opened by John Sinclair Ltd., Newcastle-on-Tyne. Normally about 400 daily main meals are served in 20 min., but 700 persons can be served in 35 min. *(Stotts of Oldham photo.)*

understand how risky it is to expose food in the heat and then to put it into the refrigerator. If the preparation room is not cool then only the smallest possible amount of food at a time should be exposed during its butchering, boning or cutting.

Blanching must be thorough and the cooling process as speedy as possible. Meat must be drained off to cool and stacked in the refrigerator. Onions should not be used in blanching. It is an excellent practice when making up mixtures for cottage pie, Hamburger steaks, rissoles or such like, to steam the preparation right through, cool off quickly (with the butter and margarine papers still closely over the top surface), before putting it away, clearly labelled, in the cold room ready for making up. The fresh onions and any vegetable additions will be included when making up time comes.

Salads and green vegetables will retain their crisp greenness if the right persons are in charge of them. Do not leave them to anybody's mercy. A cold vegetable store is essential where quantity buying must be done. If there is no such store, only great vigilance, conscientiousness and resourcefulness can prevent impaired quality and great losses. Sweated and stale greens cause smells; and flatulence, if not diarrhoea to sensitive consumers. Greens want air and light and coolness if not in cold store or on their way to the pot.

Saladings want handling as little as possible till their washing time comes. Keep them in their boxes on the floor of the vegetable refrigerator, the veg. prep. or the cool cage; or keep them in the humidator.

Pernickety appetites and saving for holidays cause minor catering problems. To counter these attend to the colour and cleanliness and the attractive appearance of your dishes, see that there are bright and tasty numbers—perhaps in smaller quantities than usual—at attractive prices to win over the doubtful and difficult people. Make suggestions on the daily menu as to what people may have for, say, 2s., 1s. 9d., 1s. 6d. and 1s. Sauté or chipped potatoes are delicious with salad: then suggest them. A few sections of orange, a few cherries or gooseberries are mouth-watering on a salad; horse-radish goes well with lots of things; onion and tomato sauce (gravy) sells a sausage; so does a trimming of ringed apple fried or baked under bacon.

Always serve a fruit dish; always have a milk pudding; see that the larder cook (or one who has a gift for this work) always has a supply of cold sweets in the refrigerator.

Catering staff holidays will work out all right if carefully planned and if you have selected your "queens" and their reliefs with skill. By "queens" I mean individuals whom you put in charge of this and that, as their own responsibility. It is a system which works remarkably well. Do this well in advance.

Relief and jobbing staff represent a problem but there are plenty to be had. Have them in on test on a day rate when possible, placing them individually under one or two of your best workers, and do not shut your eyes to bad habits or shoddy ways. You may find a treasure or two to go on your waiting list or to replace "passengers."

Sudden weather changes are taken care of when the menu is balanced, and you carry a good reserve. Cold meat with pickles or salad can be available on meat days. With milk puddings, fruit salads, jellies and milk moulds, trifles ringing the changes, a cold sweet can follow the hot fish or made-up dish. Ice-creams are always a help and the supply should be well maintained.

. . . *But Winter or Summer Keep to this*

HYGIENE DRILL

DON'TS

No handbags near food. No hair flopping over food.
No smoking in kitchen or anywhere near food.
No outdoor clothes or worn overalls hanging near food.
No food to go away warm into refrigerator.
No food left warm for long in kitchen.
No milk left exposed. Soured milk to be treated with rennet, made into soft cheese or used in puddings and cakes.
No questionable foods to be "Dovered up" and served.
No greenstuff to be allowed to "sweat" and go stale.

DO'S

Do keep swill separate in small buckets to be emptied promptly into the right swill bins. Keep waste green apart.
Do have a good swill collection, daily, bins clean and covered.
Do have a dry and wet general waste separate and paper apart.
Do have sinks and drains kept clean and flushed.
Do have that little basin of water on salad table for the fingers (and frequently changed).
Do have a pot or tin of hot water in which to stand and clean serving tools.
Do see that paper towels are supplied near sinks and preparation benches.
Do see that either continuous roller towelling or paper towels are in the toilet.
Do have cleaning systematically done everywhere.

Refrigeration. Remember that a free current of air should be provided near or in direct line to the cold store if it is to function smoothly with a minimum of maintenance. Even the removal of a couple of bricks from an outside wall can create that "nice little draught" which can make all the difference between recurrent faulting and smooth running. Sometimes where no real larder is provided it will pay the management to have a cold room built in where precious stocks of fresh foods, fats and canned meats can be safely stored at a temperature well below zero. Access to this refrigerator must be rigidly controlled, the key being in charge of one responsible person. Then the smaller refrigerator, running at a higher temperature, say 30-32° F. can be used as the larder and day to night cold food store. It is very helpful when the stillroom and pastry section can be supplied with their own smaller refrigerator.

Here is a useful tip for those **fat papers.** Give kitchen and stillroom a spike file or two. Have papers put face to face (fat sides) and speared on to the file. These papers can now, while still fresh, serve many useful purposes: covering food for steaming ovens, covering vegetables, buttering potatoes, etc., lining trays and so on.

New Industrial Equipment

EXECUTIVES' SURVEY OF AIDS TO INCREASED PRODUCTION

SAFETY

The National Industrial Safety Exhibition

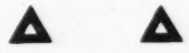
Readers who wish to have more particulars of any of the products referred to in this section are asked to write to the Editor, quoting the reference number which appears at the end of the paragraph, or, in the case of the exhibition report hereunder, the product and the exhibitor's name. We are always glad to consider for publication descriptions—preferably accompanied by an illustration suitable for reproduction—of new products.

THIS year's trade exhibition held in conjunction with the National Industrial Safety Conference at Scarborough (see page 19) was the biggest to date. More than forty exhibitors participated, and great interest in their products was shown by the conference delegates, whose total exceeded 600.

A notable display was the portable safety exhibition of **Imperial Chemical Industries Ltd.** This shows the type of safety education which I.C.I. are giving to their supervisory grades, and is touring the various factories in the organisation.

Ladies' new safety shoe (Wilkins and Denton Ltd.).

Among the fire-fighting equipment on view was the **Antifyre Ltd.** pistole extinguisher, which forms the subject of our cover picture this month. The effectiveness of this device was demonstrated—with considerable dramatic effect—after dark on the Scarborough promenade. A wooden hut, soaked in petrol, paraffin, aircraft dope, tar and other highly inflammable liquids, was set on fire. The flames were allowed to get a good hold before the pistole was used. The trigger was pressed, the powder "cloud" ejected and the fire was literally shot out. The Antifyre pistole employs de-oxygenation, blanketing and beating to extinguish a 20 ft. spread of flames in one second. It is designed to deal with fire outbreaks when first discovered, e.g., electrical fires, gas bursts, petrol and chimney fires, and fires under floorboards. It is not intended for use on smouldering or deep-seated fires. The standard unit comprises pistole with four charges and hanging bracket. All charges used on fire outbreaks are refilled free by the manufacturers. Fire-fighting equipment was also shown by **Protection Engineering Services Ltd.**



There was always a crowd of safety officer delegates on the stand of the **Pyrene Co. Ltd.** Many of them were interested in this company's fire extinguisher hire maintenance plan which, for a moderate annual fee, provides expert advice on the provision of the most suitable fire protection for any particular premises, maintenance of the equipment supplied, bi-annual inspection and test, repair and replacement of worn or unserviceable parts and refilling.

Making its bow at the exhibition was the new Totector ladies' safety shoe, made by **Wilkins and Denton Ltd.** With its low heeled, attractive sturdiness, this shoe should finally dispose of "sales resistance" among the distaff side of our working population. It has a moccasin front, and is available, in either brown willow or black leather, in full and half sizes from 2 to 8.

On the **Dunlop Rubber Co. Ltd.** stand was displayed this company's safety boot, which not only protects the foot from injury but is also waterproof. It has a rubber impregnated canvas toe-piece, a reinforcing rubber vamp, a seamless latex rubber layer, a steel toecap and a corrugated protective rubber layer on the outside. Another manufacturer of safety boots and shoes, **L. Elkan Ltd.,** drew attention to their £50 compensation scheme, under which £5 a week up to a maximum of ten weeks is paid to every worker who, while wearing Sound brand boots or shoes, sustains a toe injury.

A full range of protective footwear was also shown by **Briggs Industrial Footwear Ltd., Ward and Charter Ltd.,** and **Allen and Caswell Ltd.** The last-named featured their National steel toe safety boot, designed particularly for workers in iron and steel and other heavy trades.

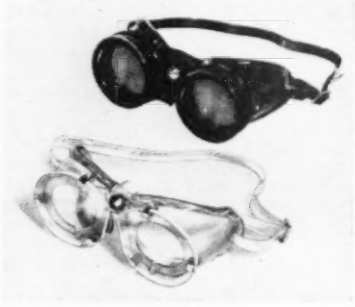
Incidentally, it would have done these safety footwear manufacturers' hearts good if they could have heard one of the delegates telling this reporter how he and his wife, when the day's work is done, *change into safety shoes because they find them so comfortable for gardening or the evening stroll.* Is there a new advertising angle here?

Well-shod feet should have a non-slip floor to stand on. The Safety-Walk surfacing of the **Minnesota Mining and Manufacturing Co. Ltd.** is already well known, but a new development was introduced to the Scarborough visitors. This mineral-coated fabric is now available in red or green in addition to the original black. It is applied by means of an adhesive to a clean floor, and is claimed to be weatherproof, waterproof and unaffected by grease, petrol, oils and normal extremes of heat and cold. Another non-slip surface

Dunlop Rubber Co. Ltd. showed this waterproof safety boot.

which has the additional advantage of reducing the risk of electric shock is the industrial matting (made of fibred-rubber link), shown by the **Nuway Manufacturing Co. Ltd.** This matting is a noise-reducer, too, and reduces breakage of edge tools, china, glassware, etc., dropped on the floor. **Furmoto Ltd.** featured their non-slip polish for stone, tiled, wood and linoleum floors.

In the protective clothing field an interesting exhibit was the **R.F.D. Company's** new welder's helmet fitted with a Perspex eyeshield operating on a cam. The eyeshield is located above eye level when the helmet is in the welding position, and is automatically brought into position in front of the eyes when the helmet is raised. Moulded in a new thermo-plastic asbestos material, this helmet is said to



Ventilated goggles by the R.F.D. Co. Ltd.

be impervious to most industrial chemicals, flameproof and immune to mildew. R.F.D. also showed garments in dynel, terylene and thermovyl, three fabrics as yet only available in limited quantities but for which outstanding properties are claimed. By the right choice of fabrics in appropriate weaves, garments can be made, say R.F.D., which will be cool to wear, easy to launder and provide resistance to acids, caustics, abrasion, combustion, mildew, shrinkage and tearing.

Protective clothing of all types, from headgear to overshoes, in plasticised vinyl sheeting, was shown by **Plysu Products Ltd.** These garments are designed to protect the worker against corrosive chemicals, and have tough seams made by high frequency welding. They can be washed in hot, soapy water. Aprons, clogs, gloves, goggles, helmets, mitts, oilskins, respirators, rubber boots and many other items of protective clothing were exhibited by **George Angus and Co. Ltd.**; and the **Martindale Electric Co. Ltd.,** showed their well-proved protective mask, which weighs ½ oz. and allows free breathing, use of goggles and unobstructed speech.

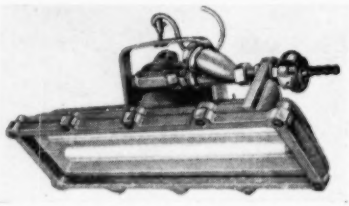
Another firm to show a wide range of protective clothing was **Wallach Bros. Ltd.,** who have specialised in industrial safety for over 60 years.

Gloves, headgear, clothing and aprons in fabric impregnated and proofed with polyvinyl-chloride (P.V.C.) attracted a constant stream of visitors to the **Northide Ltd.** stand. A full range of this clothing can be had in white P.V.C. by firms in the food, milk, confectionery and allied trades. Incidentally, a useful instruction manual on the care and maintenance of P.V.C. gloves and clothing is available from this company, together with a wall chart setting out simply and clearly the basic information contained in the manual and intended for display at the cleaning point, the place of work and in the clothing store.

In the eye-protection group, **J. and R. Fleming Ltd.** had a new product to show to the delegates. Their Armorglas hardened lenses are now available ground to almost any optical prescription. Although slightly thicker than regular ophthalmic lenses, they compare with the older laminated type and are supplied at the same price. Other exhibitors of industrial safety spectacles and goggles were the **Hadley Co. Ltd.; Stratford Products Safety Service Co. Ltd.,** whose Panorama 218 multi-purpose goggles are designed to fit over spectacles and have an ingenious ventilation system to stop misting up; and **Safety Products Ltd.,** among whose products is the Pulsafe face and eye shield No. P.E.16, with a wide-vision, cellulose acetate front which swivels above the head when not required.

Hand cleansers and barrier creams were well represented. **Sternol Ltd.** featured their Sternocleanse protective cream and Handy cleanser, together with a distributor which holds 2¼ lb. and prevents contamination and waste. The amount to be discharged at a shot can be set by the management. For distributing their hand cleanser around the factory, **Ibex Petroleum Products Ltd.** have two mobile units, with capacities of 10 gals. and 50 gals. respectively, which provide a clean and economical means of carrying the cleanser from store to dispenser. A consultation service on the prevention of dermatitis was offered by **W. and F. Walker Ltd.,** with the strong argument that, having handled most of the chemicals that cause the complaint, they are in a good position to know what can best prevent it. "After a day's work, a wash is not good enough" was how **Alexander Duckham and Co. Ltd.** drew attention to their skin cleanser, while **Rozalex Ltd.** backed up an exhibition of their barrier preparations with an invitation to delegates to bring their problems to the stand for solution.

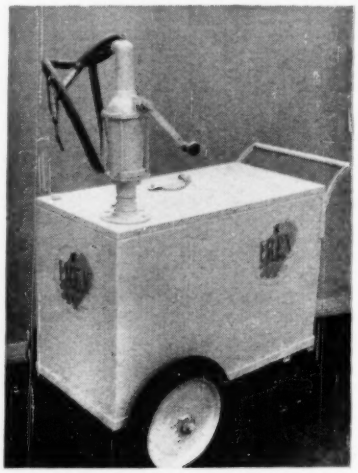
When it came to machinery guards, delegates had plenty to look at. **Press Guards** Ltd. showed their interlocking "sequential operation" guards for power presses. These have large feeding openings for easy access to the



Pneumatic electric fluorescent lamp. John Davis and Son (Derby) Ltd.

dies, and finger-light closure and automatic opening. They swing clear for tool setting. A panel exhibit displayed the Fastrip guard of **J. P. Udal.** This is made in three types, all of which are interlock guards in which a single movement closes the guard and engages the press clutch in the correct sequence. Compressed air replaces human effort in engaging the clutch.

Guards in great variety were the theme of the stand of **J. Broughton and Son (Engineers) Ltd.** Of particular interest were the Velox-V pneumatic interlock press guard and the illuminated grinder guard, designed to provide light in the right place and to eliminate reflections. An interesting, if rather specialised, exhibit was the safety lock for hydro extractors made by **H. Bailey and Co. Ltd.** This is designed to prevent the hydro lid being opened before the cage has stopped, and is adaptable to any hydro extractor, whether belt or motor driven. An offer to design, construct and erect machinery guards to meet any requirements was made by **Procter Bros. (Wireworks) Ltd.**

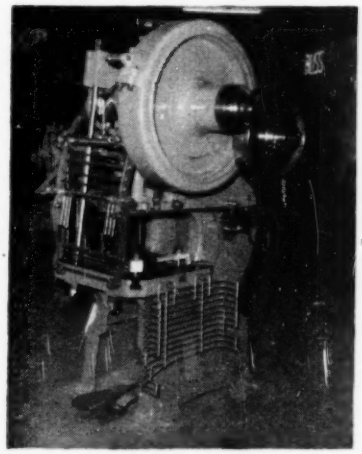


50-gal. hand cleanser dispenser. Ibex Petroleum Products Ltd.

Many different types of safety equipment were offered by **Siebe, Gorman and Co. Ltd.,** manufacturers of self-contained breathing apparatus, smoke helmets, gas masks, resuscitation apparatus, goggles, gloves, etc., and **Power House Components Ltd.** graphically demonstrated the advantages of their self-winding reels in eliminating trailing electric cables and bare conductors. This company also supplies slinger reels for use with portable electric and pneumatic hand tools. Hand tools for use in dangerous atmospheres were exhibited by **Beryllium and Copper Alloys Ltd.** Made of Telcon bronze alloy, these tools have little tendency to spark and are resistant to a number of corrosive agents, such as sulphuric acid and sea water. **Ceag Ltd.** showed a wide range of portable electric safety lamps, and **John Davis and Son (Derby) Ltd.** their fluorescent lamp, which is installed in the air main and lit by current made by an air-driven turbo-alternator.

▲ ▲

In his conference paper on "Training Techniques," Mr. Le Fevre referred to the value of films in training, and delegates examined with more than usual interest, therefore, the details of the 16 mm. instructional film on lifting offered by **Films of Industry.** "How to Avoid Muscle Strain" is its title,



Power press guard by Press Guards Ltd.

and it can be hired, together with an entertainment film to sugar the instructional pill, at five guineas a day.

Altogether it was an absorbing little exhibition, staged in the Royal and Grand hotels, and both Ro.S.P.A. and the **T.G.H. Organisation Ltd.,** the stand designers and suppliers, are to be congratulated. Delegates were unanimous in paying tribute to its value and interest.

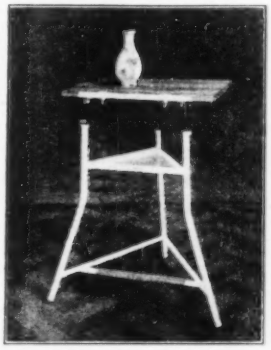
End of Exhibition Report.

WELFARE

Desk . . Table . . Easel

HERE is a useful piece of furniture for canteens, clubs, factory schools, etc. Known as the Universal Tripod, it can be used as a desk, table or art easel. Readily convertible from table to desk, the tripod will prove especially handy in factories where canteens and recreation rooms are often used for holding instructional classes, as it requires only three-quarters of the usual desk or table space, and adjustments in height or angle can be made in a matter of seconds.

Made of tubular steel, stove-enamelled with plated extensions and captive



plastic holding screws, the tripod stand has height adjustment from 31 in. to 41 in., and will hold boards varying in thickness from ½ in. to 1 in. in 90° arc. It is equipped with non-slip rubber suction feet and has rubber-covered footrest. **(PM/515.)**

For Works Notices

WELFARE officers, personnel and canteen managers, and all who from time to time have to prepare notices, posters, etc., for display on factory premises, will no doubt be interested in the Sagenta Textograph, an ingenious piece of equipment that enables accurate lettering to be reproduced in different sizes and styles. It can be mastered after only an hour or two of practice. The lettering—in a variety of colours—can be reproduced on paper, card, wood, metal or glass.

The Textograph is designed to save time for the professional artist and draughtsman, while for the non-professional it saves both time and money and reduces lettering to mechanical simplicity.

Light, bold, Roman and italic lettering are all equally easy to reproduce with a professional finish. Basically,

the device makes use of a laminated plastic stencil. But instead of the stencil being used as the direct lettering medium, it merely serves as a guide for the writing arm, which has a penholder and pen at the end of it. **(PM/516.)**

CANTEEN

Sugar Dispenser

WITH this dispenser, a measured quantity of granulated sugar can be drawn directly into a cup of tea or coffee, or small sugar bowls can be filled with a fixed amount. A movement of the lever from one side to the other gives one measure of sugar. The container holds nearly 3 lb.

Chromium plated and with solid base, the dispenser is easily dismantled for cleaning. Any size measure, from 1-6 drams, can be supplied. **(PM/517.)**

Good industrial lighting is your responsibility ✻

Adequate lighting is the duty of management and affects both the interests of shareholders and welfare of employees. Good light in the right place increases production, reduces fatigue, minimises accident risks and, at the same time, cuts lighting bills.

Although your lighting problems are best known to yourself, the solution is a matter for the lighting specialist, who alone can overcome the difficulties efficiently and economically.

Falks Industrial Lighting Service covers every aspect of illumination; from the scientific design of reflectors to the blueprinting of a layout for an entire works. Falks range of standard fittings cover practically every industrial lighting requirement.

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Summary of Official Publications

READERS' GUIDE TO ACTS, STATUTORY ORDERS, NEW RULINGS AND AWARDS CONCERNING INDUSTRY AND PERSONNEL

STATUTORY INSTRUMENTS

No. 861. The Wages Regulation (Unlicensed Place of Refreshment) (Amendment) Order, 1952. Dated April 29, 1952, made by Minister of Labour and National Service under Section 8, Catering Wages Act, 1943(a). *H.M.S.O.* 6*d.* (Amends Order U.P.R.(9) and increases statutory minimum remuneration payable in respect of certain workers. Operative from May 23, 1952.)

No. 877. The Toy Manufacturing Wages Council (Great Britain) Wages Regulation (Holidays) Order, 1952. Dated April 30, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(b). *H.M.S.O.* 4*d.* (Revokes Order Y.(41) and fixes new holidays and holiday remuneration payable. Operative from May 19, 1952.)

No. 878. The Shirtmaking Wages Council (Great Britain) Wages Regulation (Holidays) Order, 1952. Dated April 30, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(b). *H.M.S.O.* 6*d.* (Revokes Order S.(37) and fixes new holidays and holiday remuneration payable. Operative from May 23, 1952.)

No. 882. The Dressmaking and Women's Light Clothing Wages Council (England and Wales) Wages Regulation Order, 1952. Dated May 1, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(d). *H.M.S.O.* 6*d.* (Revokes Order W.D.(53) and fixes new holidays and holiday remuneration payable. Also amends Order W.D.(51), as amended by Order W.D.(55), by altering the definition of a "learner" contained in Order W.D.(51). Operative from May 23, 1952.)

N. 883. The Corset Wages Council Wages Regulation (Holidays) Order, 1952. Dated May 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(b). *H.M.S.O.* 6*d.* (Revokes Order K.(32) and fixes new holidays and holiday remuneration payable. Operative from May 23, 1952.)

No. 896. The Wholesale Mantle and Costume Wages Council (Great Britain) Wages Regulation (Holidays) Order, 1952. Dated May 2, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(b). *H.M.S.O.* 6*d.* (Revokes Order W.M.(46) and fixes new holidays and holiday remuneration payable. Operative from May 23, 1952.)

No. 897. The Ready-made and Wholesale Bespoke Tailoring Wages Council (Great Britain) Wages Regulation (Holidays) Order, 1952. Dated May 2, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(b). *H.M.S.O.* 6*d.* (Revokes Order R.M.(51) and fixes new holidays and holiday remuneration payable. Operative from May 23, 1952.)

No. 905. The Fustian Cutting Wages Council (Great Britain) Wages Regulation (Holidays) Order, 1952. Dated May 5, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(b). *H.M.S.O.* 4*d.* (Revokes Order F.C.(22) and fixes new holidays and holiday remuneration payable. Operative from May 23, 1952.)

No. 906. The Cotton Waste Reclamation Wages Council (Great Britain) Wages Regulation (Holidays) Order, 1952. Dated May 5, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(c). *H.M.S.O.* 4d. (Revokes Order C.W.(41), and fixes new holidays and holiday remuneration payable. Operative from May 23, 1952.)

No. 917. The Superannuation (Transfers from the Civil Service to the Fire Services) Rules, 1952. Dated May 5, 1952, made by Lords Commissioners of Her Majesty's Treasury, under Sections 2 and 15, Superannuation (Miscellaneous Provisions) Act, 1948(a). *H.M.S.O.* 2*d.* (Enables prior Civil Service to reckon (as to three-quarters) as pensionable Fire Service. Operative from May 5, 1952.)

No. 918. The Stamped or Pressed Metal-wares Wages Council (Great Britain) Wages Regulation (Holidays) Order, 1952. Dated May 6, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(b). *H.M.S.O.* 4*d.* (Revokes Order Q.(63). and fixes new holidays and holiday remuneration payable. Operative from May 26, 1952.)

No. 919. The Ostrich and Fancy Feather and Artificial Flower Wages Council (Great Britain) Wages Regulation (Holidays) Order, 1952. Dated May 6, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945. *H.M.S.O.* 4*d.* (Revokes Order O.F.(16) and fixes new holidays and holiday remuneration payable. Operative from May 26, 1952.)

No. 931. The Fire Services (Pensionable Employment) Regulations, 1952. Dated May 8, 1952, made by Secretary of State for Home Affairs, under Section 28, Fire Services Act, 1947(a). H.M.S.O. 3d. (Enables service with the fire brigade to reckon for pension purposes in the case of transfer to other pensionable employment under a local authority. Operative from May 16, 1952.)

No. 936. The Superannuation (Fire Brigade and Other Local Government Service) Interchange Rules, 1952. Dated May 8, 1952, made by Minister of Housing and Local Government, under Sections 2 and 15, Superannuation (Miscellaneous Provisions) Act, 1948(a). *H.M.S.O.* 4*d.* (Enables prior service with a local authority to be reckoned as pensionable fire service. Operative from May 16, 1952.)

No. 944. The Firemen's Pension Scheme Order, 1952. Dated May 9, 1952, made by Secretary of State for Home Affairs, in conjunction with the Treasury, under Section 26, Fire Services Act, 1947(a), and Sections 42 and 44, Fire Services Act, 1951(b). *H.M.S.O.* 1s. 3*d.* (Consolidates the Firemen's Pension Scheme, 1948, which is revoked, except in relation to deaths, retirements, and certain other matters. Operative from May 16, 1952.)

No. 957. The Cutlery Wages Council (Great Britain) Wages Regulations (Holidays) Order, 1952. Dated May 12, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(c). *H.M.S.O.* 4*d.* (Revokes Order C.T.(41) and Order C.T.(49), and fixes new holidays and holiday remuneration payable. Operative from May 30, 1952.)

No. 968. The Coffin Furniture and Cerement-making Wages Council (Great Britain) Wages Regulation Order, 1952. Dated May 14, 1952, made by Minister of Labour and National Service under Section 190, Wages Councils Act, 1945(b). *H.M.S.O.* 6*d.* (Amends Order U.(52) and fixes new statutory minimum remuneration payable. Operative from May 28, 1952.)

No. 986. The Milk Distributive Wages Council (England and Wales) Regulation Order, 1952. Dated May 16, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(c). *H.M.S.O.* 6*d.* (Revokes Order M.(64) and Order M.(66), and fixes new statutory minimum remuneration payable. Operative from June 8, 1952.)

No. 993. The National Insurance (Industrial Injuries) (Medical Certification) Amendment Regulations, 1952. Dated May 19, 1952, made by Minister of National Insurance under Section (1), Section 51, National Insurance (Industrial Injuries Act, 1946(a). *H.M.S.O.* 4*d.* Miscellaneous provisions varying the existing procedure in relation to medical certification. Operative from May 26, 1952.)

No. 1006. The National Insurance (Contributions) Amendment Provisional Regulations, 1952. Dated May 20, 1952, made by Minister of National Insurance, in conjunction with the Treasury, under Sub-section (4), Section 77, National Insurance Act, 1946. *H.M.S.O.* 3*d.* (Amend 1948 Regulations so that certain days of recognised or customary holidays shall be days of unemployment for purposes of exemption from payment of, and crediting of, contributions. Operative from May 26, 1952.)

No. 1007. The Baking Wages Council (England and Wales) Wages Regulation (Amendment) Order, 1952. Dated May 20, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(e). *H.M.S.O.* 4*d.* (Revokes Order B.K.(44) and fixes new statutory minimum remuneration payable. Also amends Order B.K.(42), as amended by Order B.K.(46) by varying basis on which remuneration for holidays and accrued holiday remuneration is calculated. Operative from June 11, 1952.)

No. 1015. The Aliens (Employment) (Polish Resettlement Forces) (Revocation) Order, 1952. Dated May 20, 1952, made by Secretary of State for Home Affairs under para. 2, Article 17, Aliens Order, 1920(a). *H.M.S.O.* 2*d.* (Revokes 1948 Order, and removes restrictions on employment of members, or former members, of the Polish Resettlement Corps. Operative from May 20, 1952.)

No. 1016. The Aliens (Restriction) (Polish Resettlement Forces) (Revocation) Direction, 1952. Dated May 20, 1952, made by Secretary of State for Home Affairs under para. 2, Article 17, Aliens Order, 1920(a). *H.M.S.O.* 2*d.* (Revokes 1948 Direction which exempted members of the Polish Resettlement Forces from certain provisions of the Aliens Order, 1920. Operative from June 2, 1952.)

No. 1017. The Aliens (Employment) (Polish Forces) (Revocation) Order, 1952. Dated May 20, 1952, made by Secretary of State for Home Affairs under para. 2, Article 17, Aliens Order, 1920(a). *H.M.S.O.* 2*d.* (Revokes 1948 Order, and removes restrictions on employment of members of certain Polish armed forces who were not members of the Polish Resettlement Corps. Operative from June 2, 1952.)

No. 1051. The Keg and Drum Wages Council (Great Britain) Wages Regulation (Amendment) Order, 1952. Dated May 26, 1952, made by Minister of Labour and National Service under Section 10, Wages Councils Act, 1945(b). *H.M.S.O.* 2*d.* (Amends Order K.D.(42) and increases statutory minimum remuneration payable. Operative from June 11, 1952.)

Draft. The Building (Safety, Health and Welfare) (Amendment) Regulations, 1952. Dated . . . . . made by Minister of Labour and National Service under Section 60, Factories Act, 1937(a), and Transfer of Functions (Factories, etc., Acts) Order, 1946(b). *H.M.S.O.* 2*d.* (Amends Regulation 87 of the principal Regulations regarding the use of mechanically propelled vehicles and mechanically drawn trailer-vehicles.)

GENERAL

Catering Wages Commission. Eighth Annual Report, 1951. Issued by the Ministry of Labour and National Service, May, 1951. *H.M.S.O.* 4*d.* (See also page 28.)

Industry and Employment in Scotland, 1951. Issued by the Scottish Home Department, May, 1952. Cmd. 8521. *H.M.S.O.* 2*s.* 6*d.* Review of general economic progress and of the main industries and services.

Seasonal Workers. Report of National Insurance Advisory Committee on their review of National Insurance (Seasonal Workers) Regulations for 1950. Issued by the Ministry of National Insurance, May, 1952. Cmd. 8558. *H.M.S.O.* 1s.

Fencing of Press Brakes. Reports of Joint Standing Committee on Safety in the use of Power Presses. Issued by the Ministry of Labour and National Service, Factory Department, May, 1952. *H.M.S.O.* 1s. Detailed descriptions and illustrations of automatic guards, interlocked fixed guards, distance bar trip guards, fixed guards, and photo-electric safety devices.

Fencing of Hydraulic Presses. Report of Joint Standing Committee on Safety in the Use of Power Presses. Issued by Ministry of Labour

and National Service, Factory Department. May, 1952. *H.M.S.O.* 1s. The report deals with various methods of guarding these presses, including screen guards and photo-electric devices.

Safety of Machine Tools and Other Plant. No. 4. Guillotines and Shears. Issued by Ministry of Labour and National Service, Factory Department, May, 1952. Form 294. *H.M.S.O.* 1s. Gives detailed illustrations of types of guards for guillotines and shears.

Accidents—How They Happen and How to Prevent Them. Vol. II. (New Series.) Issued by Ministry of Labour and National Service, Factory Department, April, 1952. *H.M.S.O.* 9d. (Quarterly.)

Report of Her Majesty's Inspector of Fire Services for Scotland, 1951. Issued by the Scottish Home Department. Cmd. 8524. *H.M.S.O.* 6d.

INDUSTRIAL COURT AWARDS

No. 2375. National Health Service. Reference: Dispute regarding salary scale for legal advisers of Regional Hospital Boards. Award: As from May 1, 1951, salary scale to be £1,150, rising by increments of £50 to £1,550. (30/4/52.)

No. 2376. Sheet Metal Working. Reference: Claim by employers that wages in the Dundee, Perth and Arbroath areas shall be in accordance with wages agreements in the engineering industry, and subject to the variations thereof. Award: In favour of claim. (30/4/52.)

No. 2377. Linoleum Manufacture. Reference: Claim for specific wage increases for skilled and semi-skilled craftsmen and apprentices. Award: Basic hourly rates for blockcutters to be increased as follows: skilled craftsmen 2d. per hour; semi-skilled 1½d.; apprentices 1¼d. (13/5/52.)

No. 2378. Government Industrial Establishments. Reference: For payment to male adult unskilled labourers employed in Government establishments in the London area of 117s. for a 44-hour week from November, 1951, and 121s. a week from March, 1952. Award: In favour of workmen. (14/5/52.)

No. 2379. Government Industrial Establishments. Reference: For payment of lead rate of 8s. a week to watchmen employed by the War Office, who patrol with guard dogs. Award: For lead rate of 6s. a week. (14/5/52.)

2380. Engineering Industry. Reference: To determine whether terms of engineering agreement of November, 1951, were implemented by the firm for the period November 23, 1951, to March 1, 1952. Award: The Court found that the firm had implemented the agreement in question. (20/5/52.)

No. 2381. Government Industrial Establishments. Reference: Claim that security watchkeepers employed at certain Ministry of Supply factories be paid as shift-workers. Award: Claim not established. (20/5/52.)

No. 2382. Local Authorities—Nono-trading Services. Reference: Claim that deck staff in L.C.C. sludge vessel service be conditioned to an eighteen tide fortnight without disturbing the existing four tide wek-end rest period. Award: The claim as stated was found not established, but the Court awarded that extra payment be made when the nineteenth tide was worked in any fortnight. (22/5/52.)

INDUSTRIAL DISPUTES TRIBUNAL AWARDS

No. 150. Rates of Wages and Conditions of Employment of Certain Workers Employed by a Company Operating a Flying Training School. Claim: Increase of 30s. a week for inspectors and foremen, and for 6 weeks' full pay and 6 weeks' half pay during sickness. Award: Increase of 15s. a week; claim for sick pay was not established. (28/4/52.)

No. 151. Rates of Wages of Certain Workers Employed by a Firm of Metal Window Manufacturers at Birmingham. Claim: Increase of 11s. a week to two workers, in accordance with engineering agreement of November, 1951. Award: In favour of workmen. (28/4/52.)

No. 152. Claim for Payment in Lieu of Notice in Respect of a Worker Formerly Employed by a Firm of Sanitary Engineers in London. Claim: For balance of one week's wages in lieu of notice. Award: In favour of workman. (28/4/52.)

No. 153. Rates of Wages of Workers Employed in the Opthalmic Optical Industry. Claim: Increase of 12s. a week in minimum rates for adults, with proportionate increases for juniors. Award: Increase of 10s. a week for men of 21 and over, 8s. for women, and proportionate increases for juniors. (2/5/52.)

No. 154. Rates of Wages of Workers in the Tobacco Industry. Claim: Increase of 12s. a week for adults with proportionate increases for juniors. Award: Increases of 5s. a week in basic rates for men and 4s. for women, with proportionate increases for juniors. (5/5/52.)

No. 155. Rates of Wages of Maintenance Workers Employed by a Firm of Ice-Cream Manufacturers in London. Claim: Payment of 8s. 9d. an hour to skilled mechanics and 3s. 1d. to mates. Award: Rates for fitters and welders to be 8s. 6d. per hour and 3s. for mates. (6/5/52.)

No. 156. Claim for Observance by a Burial Committee in Yorkshire of a Particular Sickness Pay Scheme in Respect of Their Grave Diggers. Claim: That the sickness pay scheme recommended by the National Joint Council for Local Authorities' Services (Manual Workers) be included in conditions of service. Award: In favour of workmen. (8/5/52.)

No. 157. Rates of Wages of Certain Workers Employed in the Baking Trade in the North of England. Claim: For terms and conditions not less favourable than those provided by the agreement between the Amalgamated Union of Operative Bakers, Confectioners and Allied Workers and the North Staffordshire Master Bakers' Association. Award: Rates of wages higher than those provided by the current Order of the Baking Wages Council by 1d. per hour for male workers over 21, by ½d per hour for males 18 and under 21 and for female workers 21 and over, by ½d. per hour for males under 18 and for females under 21. (9/5/52.)

No. 158. Rates of Wages of Certain Workers Employed by a Refractory Brick Manufacturing Company in Scotland. Claim: That plus rates paid to certain workers prior to Award No. 1594 of the National Arbitration Tribunal be continued. Award: Claim not established. (12/5/52.)

No. 159. Application of Specified Holidays with Pay Scheme to Workers Employed by a Painter and Decorator at Blairgowrie. Claim: For observance by employer of recognised terms and conditions of agreement between the National Federation of Master Painters in Scotland and the Scottish Painters' Society. Award: In favour of workmen. (13/5/52.)

No. 160. Rates of Wages of Certain Workers Employed by an Engineering Company at Worcester. Claim that differentials should have been maintained under terms of engineering agreement of November, 1950. Award: Claim not established. (13/5/52.)

No. 161. Rates of Wages and Conditions of Employment of Certain Engineering Workers employed by a Tin Mining Company in Cornwall. Claim for wage increases and observance of specified working conditions. Award: (1) Claim that skilled fitters be paid 118s. a week from November, 1950, to June, 1951, was not established; (2) the workers concerned shall be paid at the rate of 126s. a week with effect from August 10, 1951; (3) the increase of 11s. a week granted by the company with effect as from March 5, 1952, shall be paid retrospectively from December 11, 1951. (16/5/52.)

No. 162. Rates of Wages of Certain Workers Employed by a Firm of Railway Waggon Builders at Motherwell. Claim: Increase of 11s. a week for certain semi-skilled workers under terms of engineering agreement of November, 1950. Award: In favour of claim in respect of axle turners, wheel turners, wheel borers, tyre borers, wheel press operators, droppers-on, axle centerers, and axle roughers; but against the claim in respect of erectors in the Frame Department. (19/5/52.)

THE MONTH'S DATES

Industrial Welfare Society

July

3-6 "Women at Work." (A conference about women, but not specifically for women.) Keble College, Oxford.

Institute of Personnel Management

1-4 Conference for Overseas Visitors. St. Catherine's College, Cambridge.

National Institute of Industrial Psychology

2-3 Course for Supervisors. Cambridge.
7-11 Course for Management Trainees and Potential Managers. London.
14-18 Course in Selection Methods. London.

They Said . . .

QUOTATIONS OF THE MONTH

Frank Foulkes, in his presidential address to the Electrical Trades Union conference, called for a new approach to wage problems and opposition to any wage freeze. In these days of rapid increase in the cost of living, speedier wage negotiation was necessary. Quicker decisions must be given if industrial strife was to be avoided.

H. G. Knight, general secretary, Association of Supervisory Staffs, Executives and Technicians, accused British management of failing to attract the right kind of man for supervisory positions. Many of the best men would not take jobs as foremen because they could not afford to be promoted. In relation to the main industrial countries the British foreman was the worst paid in the world.

Albert Knowles, chairman, General Federation of Trade Unions, suggested that unions and employers should act together to mitigate effects of the present slump by arranging for intensive short-time working without any reduction in wages. Unions must face the fact that the seller's market had been replaced by a "tight buyers' market" and normal trade could not be resumed until the prices of goods now choking the "pipelines" had been reduced.

Sir Walter Monckton, M.P., Minister of Labour, at the annual meeting of the Association of Conservative Clubs: A great contribution could be made to increased productivity if Britain could maintain the good industrial relations and the negotiating machinery which had been gradually built up over many years. "I do not regard it as a political party question at all. It is an essential function of the Ministry that it should be available to help where negotiations break down or look like breaking down. It can only do this if the parties know that, whatever the short-comings of the Ministry, or the Minister, they will seek to deal justly and honestly with the problems that come to them, without any thought of party politics."

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Continued from p. 20

the age, experience and aptitude of the trainees. Instructors should be most carefully chosen and *trained*.

Training in manual dexterity varied from drill—instruction "by numbers" — to personal tuition, necessary as the degree of skill increased. For work other than manual, the best methods were: lesson, lecture, demonstration, lecture-demonstration, discussion group, brains trust or quiz. For young employees, the lesson was probably the most suitable, but it demanded a high standard of technique and preparation. Demonstrations must be well rehearsed; they could be done by film, filmstrip with sound, or as a dramatic presentation in person. Much safety training could only be done in this way.

The discussion group was the ideal means of training supervisors and advanced trainees.

Visual Aids

Visual aids were nearly always necessary, but they were only *aids*. They should not be used as mere substitutes for instruction. Among visual aids in common use were *the real thing*, to be employed where possible; *blackboard and chalk*, the cheapest and simplest; *wall diagrams*, must be bold and clear; *small handout diagrams*, preferable when notebook copies had to be made; and *optical projection devices*, ranging from expensive sound films to home-made lantern slides.

Mr. H. E. Phillips (safety engineer of Vauxhall Motors Ltd.) spoke on the relative responsibilities of **factory occupiers and contractors** towards their employees.

Mr. Phillips described the system adopted by his own company in arrangements made with contracting firms. Contractors are asked to sign a document which includes an undertaking to comply with the requirements of the Factories Act, 1937, and an agreement to indemnify the occupier against injuries or damages arising from the contractor's failure to comply.

The system had proved successful in most cases, and of 300-odd contractors employed by the company since the inception of the system, only two had refused to sign the contractors' safety regulations.

Mr H. M. Page (refinery superintendent) National Oil Refineries Ltd., assisted by Mr. A. H. Long (assistant refinery superintendent) spoke on the efficient use of **Permit to Work systems** as a means of promoting safety in various hazardous working conditions.

The permit to work, according to the authors, has two purposes: (1) to give information to the man who must do the job, and (2) to act as a check for the man who must make the job safe. Once a permit to work has been issued, the specified job must be safe for the man who has to carry it out, provided that all the conditions on the permit are observed.

The principal object of these systems is to cut out, as far as possible, the human element with its risk of error.

Discussing **Accident Prevention in the Future,** Dr. W. G. Hiscock (general manager and director, Imperial Smelting Corporation Ltd.) said the excellent work of the Ro.S.P.A. Industrial Safety Division should be brought to bear on those factories, mines, workshops and shipyards which had so far "not answered the call." A national state of mind must be created so that the individual became conscious of the safety of himself and others at all times, whether he were at work, at home or walking across the road. "The watchword must be education from the cradle to the grave."

How many designers gave a thought to safe practice when they were developing new plants, machines or considering a new layout?

MANAGEMENT BOOKSHELF

Safety and Statistics

A Complete Guide to the Building (Safety, Health and Welfare) Regulations, S.I., 1948, No. 1145.

A Guide to the Principal Safety Requirements of the Factories Acts, 1937 and 1948. Both published by the Royal Society for the Prevention of Accidents. Each 15s. (members 12s. 6d).

STATUTORY Instrument No. 1145 applies to building operations underaken by way of trade or business or for the purpose of any industrial or commercial undertaking, or by or on behalf of the Crown or any municipal or other public authority. The regulations have what is possibly the widest application in industry of any made under the Factories Acts and the first-named book is a successful attempt to provide a simple guide for those whose duty it is to comply with them.

The *Guide to the Principal Safety Requirements* has been designed to enable all concerned with the management, safety and welfare of factory workers to find a quick answer to any problem of factory safety legislation. The book is not a legal guide; it gives the facts—definitions, direct requirements, exceptions and exemptions—and lists under each section the full title and number of the Statutory Instruments concerned. Each page has marginal reference to the sections and sub-sections of the Acts involved, the numbers of the legal forms to be used and the Statutory Instrument related to the context of the paragraph.

Statistics and Their Application to Commerce. A. R. Ilersic, B.Com., F.S.S., H.F.I. (Publishers) Ltd. 25s.

AS businesses have expanded, so the need for regular information to guide management has grown. It is on the production side that most applications of mathematical statistics are to be found, but statistics are essential to the smooth and efficient running of the personnel office, also.

This book, intended primarily for students, has much in it of value to all engaged in the preparation of the figures which show how the job is going.

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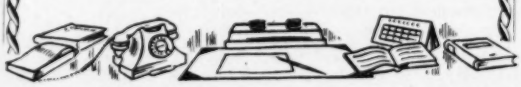

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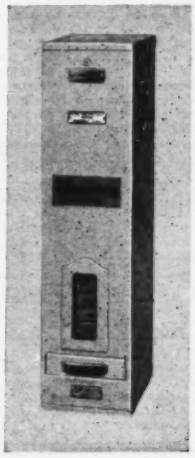

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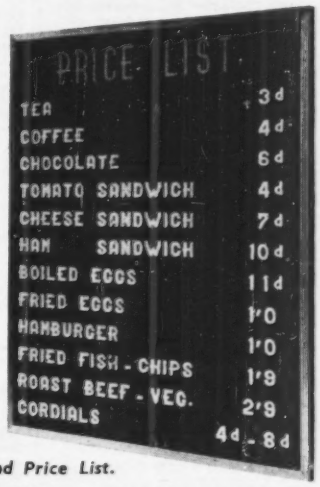

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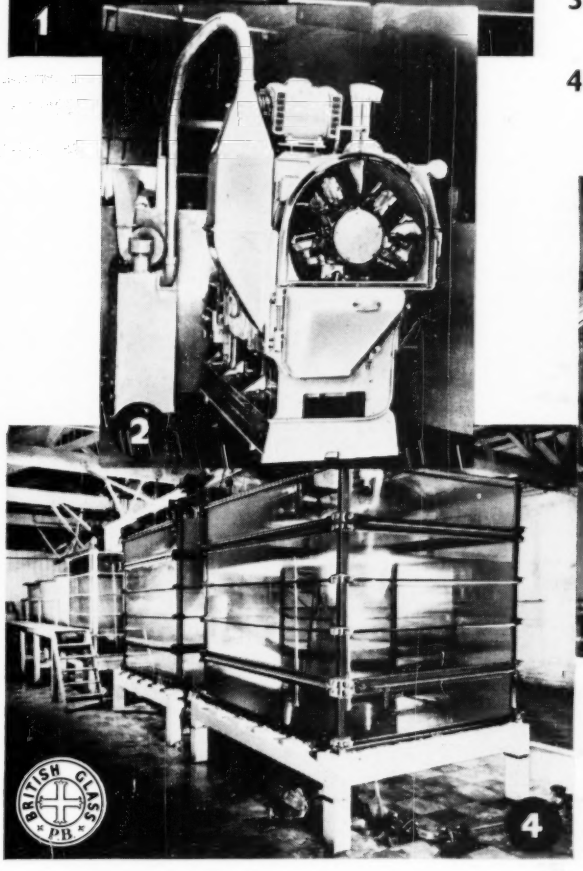

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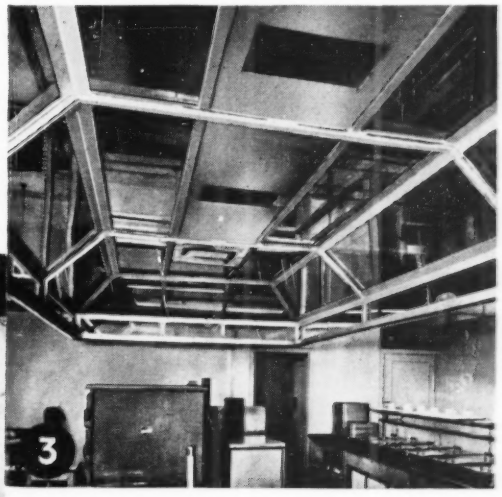

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